Contents for May, 1920

ILLUSTRATIONS

St. John's Cathedral, New York	*James C. Coppola*	Cover
Lake-Birches	*Amos A. Falls*	Frontispiece
Over the City	*Edward Lee Harrison*	223
The Cathedral	*Edward Lee Harrison*	224
The House of the Sunken Gardens	*Edward Lee Harrison*	227
A Charming Entrance	*Edward Lee Harrison*	228
Spring	*E. M. Pratt*	230
Mother-Brook in 1880	*Wilfred A. French*	233
The Curving Wood-Road	*Frederick B. Hodges*	234
Early Morning	*Raymond E. Hanson*	236
Waterfront-Scene	*Herbert B. Turner*	237
Lighter-Railway	*Herbert B. Turner*	238
Fisherman	*Raymond E. Hanson*	239
Landing-Place of the Pilgrims	*Raymond E. Hanson*	240
The Town from Landing-Place	*Herbert B. Turner*	241
The Pilgrim Spring	*Raymond E. Hanson*	243
Panorama	*Raymond E. Hanson*	244
Street-Scenes	*Raymond E. Hanson*	245
Old House, Duxbury	*Raymond E. Hanson*	246
Old Windmill, Hyannis	*Herbert B. Turner*	247
Sand-Dunes	*Raymond E. Hanson*	248
Second Prize—Still-Life	*Ross W. Baker*	251
Third Prize—Still-Life	*Charles A. Hughes*	252
Honorable Mention—Still-Life	*George W. French*	253
First Prize—Beginners' Competition	*Ozan K. Nunome*	257
Second Prize—Beginners' Competition	*G. A. Smith*	258

ARTICLES

Telephotography	*Edward Lee Harrison*	221
The True Functions of Photography	*Charles Marriott*	229
The Lure of Spring	*Boston Traveler*	231
Exposure-Guides and Experience	*Wilfred A. French, Ph.D.*	232
The Curving Wood-Road (Poem)	*Alzuma Whittemore Hodges*	235
A Provincetown Pilgrimage	*Hanson and Turner*	236

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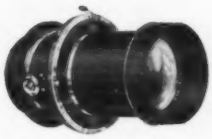

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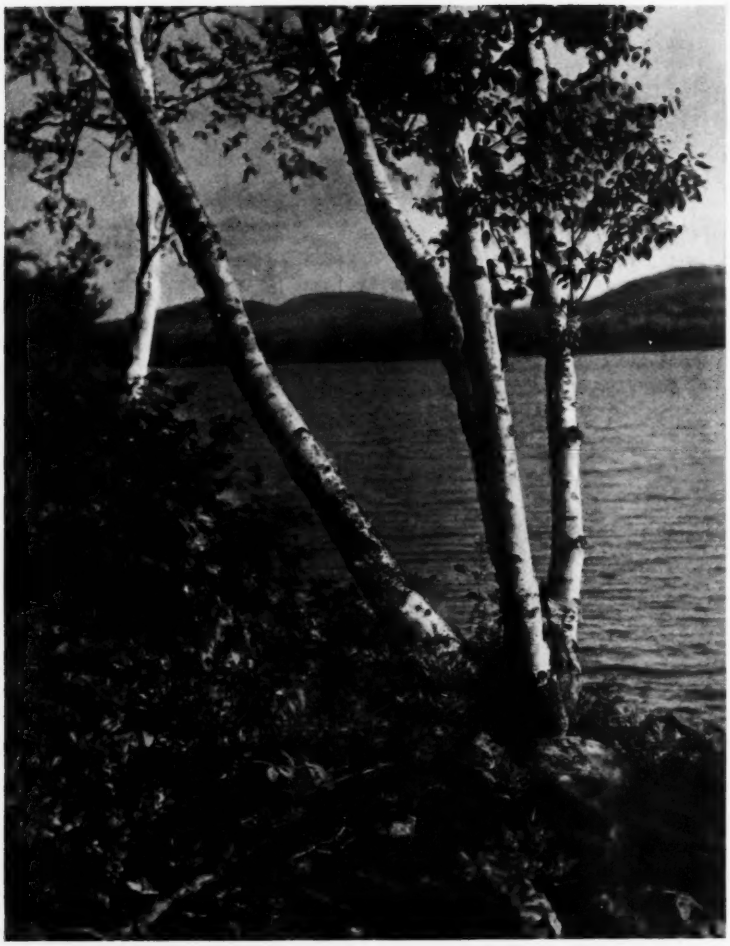

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The American Journal of Photography

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Telephotography

EDWARD LEE HARRISON

A TELEPHOTO-OBJECTIVE may be defined as a lens-combination forming a relatively large image with a small camera-extension. This implies a comparatively long equivalent focus with a short back-focus. The necessary elements of such a combination consist of a positive lens for the formation of a primary image, supplemented by a negative lens which enlarges this image by intercepting the rays forming it and carrying them to a focus at a greater distance from the entrance-pupil. The linear magnification that results from this change in focus is dependent upon the relative separation of the two lenses, and their respective distances from the focusing-screen. The instrument is virtually a photographer's telescope. Objects at a distance, architectural details, engineering-data, and marine-subjects can be photographed on a large scale with a comparatively short camera-extension.

The first part of this article will indicate briefly the elementary theories and formulæ that govern the telephoto-lens, with examples worked out by ordinary mathematical calculation. The second part will deal with the practical application of these formulæ, the telephoto-objective constructed by the author—and used in making several of the illustrations for this article—will be described and illustrated for the benefit of any readers who may wish to make their own telephoto-lenses.

As stated previously, the telephoto-objective consists of two units: a positive lens capable of throwing an image upon the photographic plate, and a negative lens of suitable focus to magnify this primary image. We are concerned, first, with the properties of the positive lens, which in this case we will assume to be a corrected anastigmat lens of the average type. The first step is to know its focal length, as from this factor we deduce the scale of its image. Usually, the manufacturers' markings are sufficiently accurate; but we will determine this factor for ourselves and be independent.

The simplest and most direct method to determine the focal length of any lens-system is to institute a comparison between its image and one thrown by a pinhole-lens, the focus of which is easily measured. In both cases, the focusing-screen must be the same distance from the object upon which the lenses are focused.

Example A. To determine the height of image thrown by pinhole-lens:

Distance from pinhole to object = 240 inches.

Distance from pinhole to focusing-screen = 8 inches.

Height of object = 60 inches.

$$\text{Height of image} = 60 \div \frac{240}{8} = 2 \text{ inches.}$$

Example B. To determine the focus of the lens-system:

Height of object = 60 inches — distance screen to object = 248 inches — same as before. Focus on object and measure height of image.

Focus of lens expressed by ratio, 8 inches : x : : 2 inches : Y.

Y = height of image thrown by lens, say 2¼ inches in this case.

∴ 8 inches : x : : 2 inches : 2¼ inches. 2 x = 18 inches. x = 9 inches. = Required focus.

Although this method — being graphic — is a close approximation only, it is sufficiently accurate for all practical purposes. There are a number of very scientific and complicated formulæ to determine the focal strength of compound lenses; but, personally, we have never had much luck with them.

The scale of the image is directly dependent upon two factors — the focal length of the lens and the distance that separates the focusing-screen from the object.

Example: We will assume that we have an object 40 inches high and wish to render it on

the screen 4 inches high. The focal length of our lens is 9 inches. Our scale ratio is 4/40 or 1/10. Hence — the distance of lens to object = (10 + 1) times the focal length of the lens = 11 inches x 9 = 99 inches. The distance of lens to image — or, in other words — the focus, in this case = $\frac{10+1}{10}$ times the focal length of lens = 11/10 x 9 = 9.9 inches. The unit 1 added above, represents one focal length of the lens, which must be deducted from the relative magnification, as it represents the front focal point, according to the law of conjugate foci. Now,

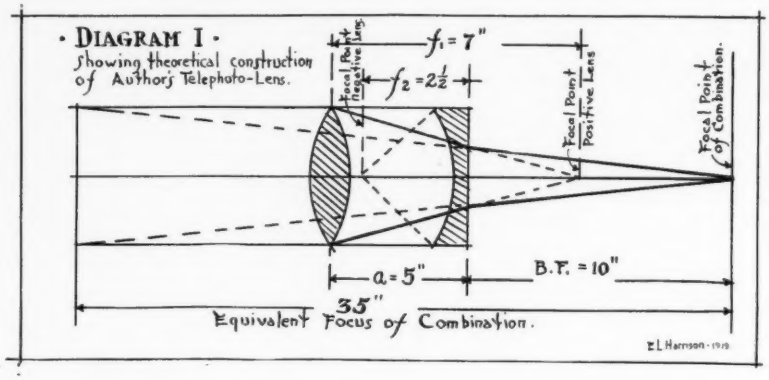
Size of image = 42 inches $\div \left(\frac{56}{7} - 1\right) = 6$ inches, a ratio of 1/7.

Using the same data, but a 14-inch lens.

Size of image = 42 inches $\div \left(\frac{56}{14} - 1\right) = 14$ inches, a ratio of 1/3.

And the closer the object is, the greater will be the departure from the direct ratio shown at infinity.

We will now point out some interesting facts that concern the negative half of the combination. A negative lens disperses rays of light,



for the benefit of those who do not know what the last two words mean, we will explain. Let us assume that the lens is of 20 inches focus and the object is 200 inches away from it. It is, therefore, distant 10 times the focal length of the lens; but only 9 times from the front focal point —every lens has a front and a back-focus—so that the "conjugate" will be 1/9 of the focal length beyond the back focal point; hence, the scale-ratio will be one to nine, or 1/9, and an object 9 inches high will be imaged 1 inch high, on the screen or plate.

The image-scales of two lenses working at infinity are directly proportional to their focal lengths. Thus, if a lens of 10-inch focus renders an image 2 inches high, one of 20-inch focus, working from the same position, would render an image 4 inches high. But for distances less than infinity, the case is different, and as this fact has a direct bearing on telephotographic formulæ, we will figure it out.

Let us take an object 42 inches high situated 56 inches from the optical center of a lens of 7-inch focus.

instead of converging them, as a positive lens does. Moreover, a negative lens will not of itself form an image on a screen. In the case of the telephoto-lens it is used to intercept the rays of light from the positive lens, and bring them to a focus at a point more distant from the entrance-pupil, thereby enlarging the image.

To determine the focal length of any negative lens, focus on an object with an ordinary positive lens and measure the image. Fix the negative lens behind the positive in a position to intercept the rays forming the image, focus the combination and measure the new image. Now note the following data:

1. The distance from the back of negative lens to the image = B^1.

2. The magnification or ratio of enlargement of the original image = R^1. For example, if the original image is 2 inches high, and the one formed by the combination 6 inches high, the ratio R, will be 3.

After this is done, move the negative lens a short distance nearer the positive, fix in position —without changing the position of the positive

OVER THE CITY — EDWARD LEE HARRISON

lens—and focus. Take the same two observations, calling the new back focus B^2 and the new ratio of enlargement R^2. Then the focal length of the negative lens $= \frac{B^2 - B^1}{R^2 - R^1}$. Having at our command the means to determine the focal lengths of both our lenses, we will proceed to combine them in such a manner as to form a telephoto-objective, and to note the various properties of this combination. It may be observed that, as a rule, the best results are obtained with a negative lens of not more than half the focal length of the positive lens. (Diagram I.) See opposite page.

We will now deduce the following rules:

RULE I. The focus of the complete telephoto-objective is equal to the product of the focal lengths of its components divided by the amount of separation in excess of the difference of their focal lengths,

$$\text{or } F = \frac{f^1 \times f^2}{d} \cdot \quad d = a - (f^1 - f^2).$$

RULE II. The back-focus of the combination—the distance from the negative lens to the screen—is formed by multiplying the focal length of the negative lens by the difference between the focal length of the positive lens and the entire separation, and dividing by the amount of separation in excess of the difference in focal lengths,

$$\text{or Back-Focus} = \frac{f^2 \times (f^1 - a)}{d}.$$

Example:

Focal length of positive lens = 7 inches = f^1.

Focal length of negative lens = $2\frac{1}{2}$ inches = f^2.

Interval of separation = 5 inches = a.

Amount of separation in excess of difference of focal lengths = $\frac{1}{2}$ inch = d.

$$\text{Focus of complete telephoto-objective} = \frac{f^1 \times f^2}{d}$$

$$= \frac{7 \text{ inches} \times 2\frac{1}{2} \text{ inches}}{\frac{1}{2} \text{ inch}} = 35 \text{ inches} = F.$$

$$\text{Back-Focus} = \frac{f^2 \times (f^1 - a)}{} = \frac{2\frac{1}{2} \text{ in.} \times 2 \text{ in.}}{\frac{1}{2} \text{ in.}} =$$

10 inches = Back-Focus.

NOTE.—These figures represent the calculations and sizes used in the construction of the author's telephoto-lens.

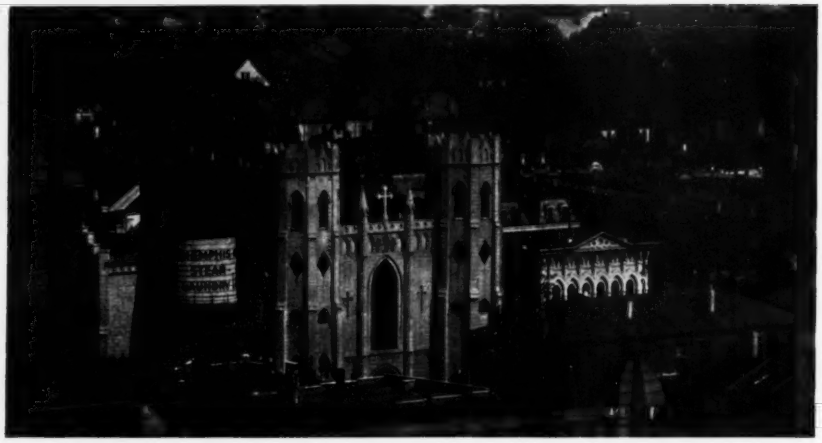
It will be seen that by variation of this interval "d," any focal length may be established, within the limits of the bellows-draw of the camera.

RULE III. To find the camera-extension or back-focus necessary for a given magnification, multiply the focal length of the negative lens by the magnification desired less one. Let us take the above case, which has a magnification of 5 times the positive image. Expressed in formula Back-Focus = f^2 (M — I), or, Back-Focus = $2\frac{1}{2}$ (5 — 1) = 10.

RULE IV. To find the magnification M for a given extension: divide the back-focus by the focal length of the negative lens and add one.

$$\text{Expressed in Formula } M = \frac{\text{Back-Focus}}{f2} + 1.$$

$$\text{thus, } M = \frac{10}{2\frac{1}{2}} + 1 = 5.$$



THE CATHEDRAL — EDWARD LEE HARRISON

RULE V. To find the focal length of the telephoto-lens—working at infinity; or, in other words, for distant objects—multiply the focal length of the positive lens by the magnification.

$F = M f^1$, or 7 inches x 5 = 35 inches.

Also

$F = m \times B.F. + f^1 = 2.8 \times 10 + 7 = 35$ in.

$$m = \frac{f^1}{f^2} = \frac{7}{2\frac{1}{2}} = 2.8 \text{ inches.}$$

In the above case, both formulæ check with the first formula.

We find from the above problem that with a camera-extension of 10 inches we obtain an equivalent focus of 35 inches.

We have seen that there is one ratio of magnification for infinity and another for near objects.

Problem:

Focal length of positive element $f^1 = 7$ inches.

Focal length of negative lens $f^2 = 2\frac{1}{2}$ inches.

Distance of object 56 inches.

Desired magnification, or enlargement-ratio $= 1/2 = \frac{1}{N}$. In other words we desire to make the image half actual size.

$\frac{1}{n}$ = ratio of enlargement of positive lens alone $= \frac{56}{7} - 1 = 1/7$.

M = magnification given by negative lens.

N = ratio of enlargement of complete telephoto-lens.

$$\frac{1}{N} = \frac{1}{n} \times M \text{ or } \tfrac{1}{2} = 1/7 \times M.$$

$$M = M\,\frac{1/2}{1/7} = 3\tfrac{1}{2}.$$

$B.F. = f^2 (M - 1)$. (Rule III.)

$2\frac{1}{2}\ (3\frac{1}{2} - 1) = 6.25$ inches = Back-Focus.

Focus of complete telephoto-lens:

$$F = m\left(B.F. - \frac{F}{N}\right) + f^1$$

$$\text{or } F\left(\frac{m}{N} + 1\right) = m \times B.F. + f^1.$$

$$F = \frac{m \times B.F. + f^1}{\left(\frac{m}{N} + 1\right)}$$

In the above problem

$$m = \frac{f1}{f2} = \frac{7 \text{ inches}}{2\frac{1}{2} \text{ inches}} = 2.8 \text{ inches}$$

$f^1 = 7$ inches

$f^2 = 2\frac{1}{2}$ inches

Back-Focus = 6.25 inches

$$\frac{1}{N} = \frac{1}{2}$$

$$F = \left(\frac{2.8 \text{ in.} \times 6.25 \text{ in} + 7 \text{ in.}}{\frac{2.8}{2} \text{ in.} + 1}\right) = 10.2 \text{ in.}$$

$$M = \frac{6.25}{2.5} + 1 = 3.5$$

Problem:

Assume an image 8 inches high.

Distance as above 56 inches.

By previous formula we find that the size of image formed by the positive lens alone $= \left(8 \div \frac{56}{7} - 1\right) = 1\frac{1}{7}$ inches

and M = 3.5.

Therefore, size of image = 3.5 x 1 1/7 = 4 inches or half life-size as above assumed.

Having thus groped our way through the first maze of calculations, we will draw a long breath and proceed to figure out the image-circle, proper exposure and depth of focus.

In the first place, the circle of illumination—which governs the size of the plate which can be used—is found by the following formula, in which

D = diameter of image circle.
d^1 = aperture of positive lens (diameter).
d^2 = aperture of negative lens.
f^1 = focus of positive lens.
f^2 = focus of negative lens.
a = separation of two lenses.

Back-Focus = distance from negative lens to plate.

Reducing above formula to practice.

$$D = \frac{\text{Back-Focus}}{f2}\left(\frac{d^1 f^2 + d^2 f^1}{f^1 - f^2}.\right)$$

or in the case of the author's lens, for 5 inches separation of elements, giving a back-focus of 10 inches,

$$D = \frac{10}{2\frac{1}{2}}\left(\frac{1.55 \text{ in. x } 2\frac{1}{2} \text{ in. } + 1 \text{ in. x } 7 \text{ in.}}{7 \text{ in. } - 2\frac{1}{2} \text{ in.}}\right) =$$

9.68 inches
which is ample for general use.

It will be found probably, that on certain of the lower magnifications, involving the use of a shorter back-focus, the circle will be reduced by the lens-mouth. This is not generally of much inconvenience, the more especially as the telephoto is used mostly for details.

The proper exposure for the telephoto-lens varies directly as the square of the magnification. This means that for a ratio of five magnifications of the image thrown by the positive lens, twenty-five times the proper exposure for the positive lens alone must be given. For example, setting the original diaphragm-stop at F/11, and assuming that conditions require a 1/10 second exposure, the proper exposure for the complete telephoto-system working at five magnifications, will be 5 x 5 x 1/10 second or $2\frac{1}{2}$ seconds. If a ray-filter is used, this exposure must also be multiplied by its factor.

It will be assumed at once that stopping down will increase the definition of the telephoto-lens. This is so, up to certain limits, and here our old friend Lord Rayleigh, with his pinhole-investigations again sets a limit of F/72. And again, as in the former pinhole-review, we must differ with the learned scientist. No doubt his conclusions were absolutely true with regard to the apparatus he used—whatever it was. But, in the case of the author's telephoto-lens, using a highly corrected and speedy lens of 7-inch focus, and an ordinary achromatic and spherically corrected negative combination, uncorrected for astigmatism or flatness of field, the definition was noticeably improved, by the use of small stops, some of them less than F/72. It must be understood that no issue is taken with the scientific conclusions before mentioned, and the personal observations are given for information only.

The diaphragm-stop for the telephoto-lens must be determined with respect to the effective aperture and equivalent focal length of the combination; and, as a matter of course, has nothing to do with the stops marked on the positive lens. It is evident, therefore, that excessively small stops may be obtained unwittingly. In the above case, a telephoto-combination of 35-inch equivalent focus, the positive lens has 7-inch focus, and an aperture of F/16 on its diaphragm-scale would mean one of F/80 for the combination.

This stop appears to work excellently, although it is somewhat over the limit of F/72 set by the authorities; and, in point of fact, no difference can be observed in the crispness of definition of the author's lens for any complete-system stops between the ratios F/32 and F/110, using 35-inch focus, and corresponding to original diaphragm-stops of F/6.3 and F/22 in the positive lens.

As a sort of final problem in the theory of telephotography, we will determine the depth of focus of the author's combination. The terms front and back-focus here used, signify the number of inches forward and backward of the point focused upon which will be rendered sufficiently sharp for good definition. We have used 1/100 of an inch as the circle of diffusion, which, of course, must be divided by the ratio of magnification. In the case figured below, this is 5 and the diffusion-circle becomes 1/500 of an inch, a very exacting requirement, and one that demands the finest of photographic objectives as a positive lens.

$$\text{Front depth} = \frac{R^1 f^1 (R^1 + 1)}{500\,S + (R^1 + 1)}.$$

f^1 = Focus of positive lens.
R^1 = Image scale of positive lens alone.
S = Speed of lens, or diaphragm-stop of original lens-mount.

Using a 7-inch positive lens and a $2\frac{1}{2}$-inch negative, spaced to obtain 35-inch equivalent focus, or a magnification of 5 times, and assuming an object 35 feet or 420 inches distant, with an original diaphragm-stop of F/8, we have for front-depth the following:

$$R^1 = \frac{1}{\frac{420}{7} - 1} = \frac{1}{59}.$$

And $$\frac{59 \times 7\ (59+1)}{\frac{500}{8} \times 7\ (59+1)} = 50 \text{ inches.}$$

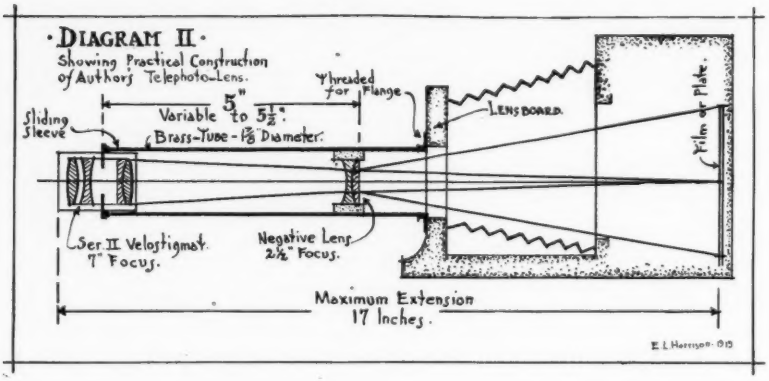
and for Back-depth:

$$\frac{59 \times 7\ (59+1)}{\frac{500}{8} \times 7 - (59+1)} = 65 \text{ inches.}$$

And for an object 10 feet distant, same data, the front-depth of field works out 5.8 inches and the back-depth—6.6 inches.

The author has found that the various problems in telephotography are worked out quite readily on the logarithm slide-rule which will give results accurate enough for practice.

negative lens-tubes on the market. This made a very awkward fitting necessary. Being desirous to learn something of the subject, we went to the library and read up on telephotography. Then some hunting around resulted in finding a negative lens-cell—from an old style projection lens—of approximately 2½-inch focus. It appeared to be fairly well corrected achromatically, being double, and was rectilinear but not anastigmatic. It was thought that a fairly small stop would correct this defect, so a brass-tube about 6½ inches long and slightly less than 2 inches in diameter was procured from our old friend, the plumber, threaded to fit the camera-flange, and the negative lens mounted therein,



Having in the first part of this article outlined the theoretical principles that govern the telephoto-objective, we will proceed to consider their practical application. The advantages and convenience of this instrument are so obvious and manifold, as to make its lack of general use a matter of remark to those who have availed themselves of its capabilities.

The first consideration is the apparatus itself. Some time ago the writer determined to equip one of his outfits with a telephoto-lens, and for the purpose of illustration we will describe the equipment and how it was made.

The outfit mentioned was an ordinary 3-A Graflex, using standard 3¼ x 5½ roll-films, and was fitted with a Wollensak Series II Velostigmat, of 7-inch equivalent focus, working at a speed of F/4.5. On account of this speed, the lens-mount was considerably larger than the ones usually intended for combination with the several

in such fashion that it could be pushed up and down the barrel until adjusted. The Series II Velostigmat was mounted in the end of the tube, in a threaded ferrule for accurate focusing and the outfit was completed by painting the inside a dead black and cementing a leather-cover on the outside. The drawing herewith indicates the construction. This objective renders an excellent image, variable for magnifications from five to eight times by changing the distance between the two lenses and focusing with the camera rack-and-pinion. The camera-extension was ten inches and no further bellows-draw was required. On account of the great focal length, focusing is done more readily at the front lens-mount.

There are on the market a number of well-corrected negative lenses set in rack-and-pinion mount ready for use with standard photographic objectives, and their cost is not great, considering the range of usefulness they possess.

THE HOUSE OF THE SUNKEN GARDENS — EDWARD LEE HARRISON

Should the photographer wish to adjust his own instrument, any of the well-known optical firms will gladly grind a negative lens, sufficiently well corrected for the purpose, at a moderate cost. In general this lens should be not more than half the equivalent focal length of the positive lens, as the aberrations are more easily controlled for the shorter negative proportion.

The camera should possess an exceptionally rigid front and the tripod should be of an extra-heavy type for this class of work, as the exposures increase as the square of the magnification, and if filters and small stops are employed, the exposure may be—on difficult subjects, at high magnifications—as much as fifty seconds. The diaphragm-stops of the original lens-mounts are of no use, except for comparison; but the stopping down may be done with the original diaphragm, taking care not to stop below F/110 for the complete system. For an equivalent focal length of 35 inches, using a 7-inch positive lens, this would read F/22 on the original mount, and is extreme. If the lens is sufficiently corrected, F/11 or F/16 would probably be a better stop to use, and would save a long exposure.

A ray-filter should be employed for all except the most brilliant subjects, especially if the atmosphere is hazy. There is nothing like a light ray-filter to cut through haze. Subjects which can hardly be seen sufficiently well to focus on the focusing-screen can be rendered with amazing clearness by the proper use of a ray-filter and orthochromatic film or plate. And if good contrast in a very hazy landscape is desired, a Wratten "G" filter, which will increase the exposure from 80 to 100 times, may be used to advantage. Lastly, a lens-hood should be used in virtually all cases to shade the front lens from sky-reflections. This much-neglected detail will do more toward obtaining brilliant telephoto-negatives than any single precaution. The one used by the author is made of flexible leather, and is—together with the ray-screens, wire-release, pinhole-lens, and extra films—easily carried in the side pockets of the Graflex. There are many ways in which the magnification and great focal length of the telephoto-lens may be used advantageously, such as when attempting portraiture in a cramped studio, in science- and nature-photography, mountain- and marine-views and photographs of celestial bodies; but the writer prefers to regard the instrument as a useful accessory to the rest of his outfit; and values it chiefly for its improved perspective and visual planes, and its adaptability to all kinds of architectural and engineering detail-work.

Probably, the first incentive toward the improvement of the telephoto-lens arose out of the requirements of astronomical photography. Dallmeyer exhibited some work at the London Camera Club that he made with instruments of this class that he had invented, in the early days

A CHARMING ENTRANCE EDWARD LEE HARRISON

of photography. Moreover, he had devised several instruments for the observatory at Greenwich. As an example of what can be accomplished with a telephoto-objective of high power we may cite the photograph of Mont Blanc, made from Geneva, forty-four miles distant, by Boissonas. This historic photograph was made with a telephotographic combination of twenty-five feet equivalent focal length and was 20 x 16 inches in size. Compared to this, a picture made under the same conditions, with an ordinary lens of 7½-inch focus would be ½-inch wide. This photograph was awarded the Royal Society Medal in 1892. Some workers are of opinion that the results of the telephoto can be duplicated by straight enlargement; but a few moments' reflection will dispel this idea. In the first place, the grain of the film and the diffusion naturally resulting from projection, set a limit on the direct enlarging-process. The enlargement that results from the negative dispersion of the supplementary telephoto-lens, is an enlargement of the aërial image, having no granular structure and hence no diffusion; and, consequently, with well-corrected lenses, the results are virtually equal to the original image. Within certain limits, the single combinations of convertible lenses will answer for telephoto-work with small cameras that have double bellows extensions. For cameras of ordinary extension, another form of telephoto-lens of fixed magnification is available. This is known as the Galilean telescope-type and its focus is usually about twice the required bellows-draw. This objective consists of an achromatic positive lens with a low-power corrective negative lens mounted in the same barrel and requires no further attachments to form the image.

There is another form of telephoto-lens of fixed magnification usually about double the focus of its required draw of bellows, but its field of usefulness is limited. This is known as the Kepler Telescope type, and consists of two positive lenses, the smaller magnifying the image thrown by the larger. To this type belong the Cooke-Telar, Dallmeyer Adon, Busch Bis-Telar, and the Ross Telecentric; all factory-adjusted lenses, and not manufactured in this country. These are not really telephoto-lenses in the true sense, and their construction and formulæ will not be taken up in this article.

On the whole, the special photographic field of the telephoto-lens lies in architectural and structural engineering-work. Many valuable architectural details can be obtained by the tourist who turns the inquisitive eye of his instrument toward the carved panels and sculptured cornices of the masterpieces of the builder's art. The practical value of the telephoto-lens to the professional designer and structural engineer is unquestioned. Details of steel bridge-work, sky-scraper-framing, and other construction-work can be obtained from strategic points, and are very useful. It is certainly a source of satisfac-

tion to be able to take up a stand at an advantageous point, and obtain successively a general view, a detail-view, and a close-up of some particularly interesting bit, without changing the position of the camera.

The important point about telephotography is to understand its limitations as well as its range of usefulness. No photographer who has once learned to avail himself of the manifold advantages of the telephoto-equipment will be content to be without it. He will bring a new photographic world within the reach of his camera.

Not so long ago we stood gazing wistfully at a beautiful suburban residence—seen in a distant prospect through the bars of a substantial iron-fence behind which raged a bull-dog of fearsome proportions and savage mien. What, in such a case, can exceed the satisfaction we felt, as we set up the tripod just beyond his angry reach, adjusted our telephoto-objective and calmly obtained the coveted picture; the while addressing appropriate and derisive remarks to our fiery adversary? Truly, science is wondrously convenient at times!

The True Functions of Photography

CHARLES MARRIOTT

REAMS have been written about the true function of photography, but it seems to me that most of them are unnecessary if we think about the things that photography is done with. The best guide to conduct in any department of life is a consideration of the tools and materials. The matter is complicated, of course, when the nature of the tools and materials is not very clearly defined or not very completely understood, but the principle remains; and if we had a clear understanding of human nature, we should have an infallible guide to conduct in all human affairs.

The tools and materials of the photographer are light and the sensitive salts of silver. Strictly speaking, the whole art of photography, with all its possible functions and all the possible æsthetic rules that may be deduced from its practice and all the hopes of its future perfection, is contained in its name—photography, "describing with light."

The universal glance of light, exquisitely subtle in its degrees of intensity and duration, and the perfect and immediate response of the sensitive salts of silver, carry with them a certain consequence. It is that in all that concerns the actual production of the picture a photograph really takes itself.

We have only to glance at the tools and materials used in the other pictorial arts to see that photography does not resemble any of them. In all of those the picture is actually the creation of the human hand, whatever other organs or faculties are involved in its making.

In our discussions of the rights and wrongs, the merits and defects, of photography as compared with the other arts, we are apt to lose sight of this cardinal and simple fact. The other arts are all done with the hand; whereas in photography the hand is only concerned in preparing and controlling the conditions in which the picture takes itself.

Do not think that I am belittling the technical processes of the photographer. These are supremely important, and they constitute an education in themselves, and for their proper fulfilment they demand a wide range of human faculties. But what I would point out and emphasize is that they have nothing to do with the actual production of the picture. That results from the mystical union of light and the sensitive salts of silver.

The photographer presides over that union, but only as a farmer may be said to preside over the union of the beasts he breeds from. He can choose the parents, and he can rear the offspring; but he has nothing whatever to do with the fact of conception; and any attempted interference with it is likely to have as prejudicial effects in the one case as in the other.

It follows that photography is absolutely a law to itself. None of the rules and standards that are legitimately derived from the practice of those arts that are done with the hand has any direct bearing upon photography. Even the principles of pictorial composition have to be modified before they can be applied to it effectively; because detail, which is a hindrance to drawing and painting, presents no difficulty to

SPRING E. M. PRATT

the camera; and composition which does not take advantage of the full capacities of the medium to which it is applied is a sterile exercise.

With a correct use of the means at their disposal, photographers still cling to the æsthetic standards of painting—which is produced by entirely different means. I doubt that there are any æsthetic rules or standards that are valid beyond the medium in which they originated. Examine them carefully, and you will find that they are based upon some necessity of that medium. Thus, breadth is a virtue in painting, mainly because it is only when paint is broadly handled that you display its full beauties of color and surface; it is a virtue in photography, only in so far as it enables the picture to be seen without distraction.

What I am pleading for, you see, is the final and complete emancipation of photography from the tyranny of all or any of the other arts. I want photography to be practised as if painting did not exist. It is, I know, extremely difficult in practising one art to rid your mind of considerations connected with another art that resembles it superficially; but the only way to perfection is to do things on our own lines. The resemblance between painting and photography is purely incidental; both are concerned in making pictures, but since the means employed are entirely different, there is not the least reason why the pictures should be the same in kind.

I would not go so far as to say that the photographer ought never to look at paintings, because I do not believe in prohibitions of any kind; but he ought to look at paintings for their own sakes, and not because they have anything to teach him about his own art except by contraries.

One of the things which struck me forcibly in

looking at your exhibition was the extreme diversity of effects possible to photography. First of all, there are the effects connected with the swiftness of light and the delicacy of its revelations in passing. Whether as regards a turn of the weather, or a fleeting human expression, the painter can do no more than suggest the passing moment; but the photographer can actually capture the moment as it flies, alike in landscape and in portraiture. We are accustomed to say that the advantage of painting is that it enables the artist to convey the persistent, as distinct from the momentary, character of the subject. This is true; but it is also true that the photographer has an advantage in the other direction. Often the real person only comes out in a flash, in conversation or in response to a glance: and this flash the painter can reproduce only from memory, whereas the photographer can catch it at the very moment.

Then there is that immense range of effects dependent upon the subtlety of gradation in tone. There is something in the infinitesimal degrees with which light creeps over a smooth, rounded surface, which gives great pleasure to the senses; and this is an effect that presents no difficulty to the photographer. It is, incidentally, an artistic justification of the nude in photography.

Then there is the great question of detail. Obviously, the brush is ill-adapted to the reproduction of very fine detail, as of trees against the sky; and, as a rule, the painter is content with suggesting the effect. But there can be no doubt that there is an artistic interest in this very fine detail itself, and it is within easy range of photography.

I have not been trying to make out that painters ought not to deal with the same subjects. There is nothing in the whole world that cannot be stated in terms of your particular art, whatever it may be. All that I mean is that the terms differ with the art: that certain aspects of subjects are better adapted to the one art, and certain other aspects to the other.

A great many of the characteristics that are quite properly looked upon as virtues in painting are, in reality, due to almost insuperable difficulties with the tools and materials. They are virtues of necessity. In photography, the same necessity no longer exists, and therefore they cease to be virtues. They may even become vices.—*Paper read by Mr. Marriott before the Camera Club, London.*

The Lure of Spring

THE photographic publisher may not arrogate to himself the right to speak in terms of familiarity on the subject of photography. The "special writer," when he is sure of his ground, has often to his credit admirable opinions on the practice of photography. The following paragraphs from the *Boston Traveler* are an intelligent invitation for the camera-user to sally forth at the opening of the spring-season.

"These spring-days seem to stir the pulses of the camera-owner. Every bright day beckons to him irresistibly to come forth and see what nature has to offer freely—his for the taking. The short days of winter, when the sun's rays are aslant and cold, have little allurement for the photographer. For an occasional snow-scene of rare beauty, he may bring forth his outfit and make a few exposures. But for the most part, the camera is allowed to hibernate.

"Now, the camera refuses to stay within doors. It does everything but walk out on its own tripod. It is eager to be searching out scenes of beauty, episodes of interest. From the simple little snap-boxes to the elaborate focusing-instruments, with their fine lenses and wonderful shutters, the range of instruments is wide enough to suit the whim or fancy of every individual. The degree of success obtainable does not seem to depend so much upon the instrument used as upon the skill and taste of the operator.

"Photography, as a pastime, may become exacting in time or money, or it may be kept within bounds. The further one goes in studying and experimenting, the more one discovers that he doesn't know much about it. And yet, for those who like it, there is an abundant source of pleasure in making pictures, in developing the exposed plates, and preparing the finished prints. And then, for every success there is the reward of a permanent record of scenes and situations that have afforded pleasure at the moment and will continue to afford pleasure as often as the album of souvenirs is thumbed over."

Exposure-Guides and Experience

WILFRED A. FRENCH, Ph.D.

SEVERAL correspondents have written to the Editor expressing much satisfaction in reading some of his personal experiences during the early days of amateur photography, adding that many of them admirably fit modern conditions. That is exactly the reason they are narrated in PHOTO-ERA, for they will be found applicable to present-day activities.

In this connection, he recalls an incident that still hits the tripod-camerist who relies for correct exposures solely upon a complicated guide in the form of a book which he affectionately terms his "vade mecum." There are many Boston amateurs still living who will remember the veteran photographer, John W. Black, active until the time of his death—thirty years ago.

It was one Sunday forenoon, in the eighties, that about a dozen active members of the Boston Camera Club were scattered along Washington Street, not far from the Transcript Building. They were surveying the Old South Church, corner of Milk Street, preparatory to making careful pictures of that historic edifice. There was no street-traffic of any kind, at the time, so that the camerists found no obstacles in placing their camera-bearing tripods wherever they pleased—on the sidewalk or in the middle of the street. Much time was spent in placing and studying the image on the groundglass. Mr. Black happened to arrive on the scene at about ten o'clock. His object was to visit his studio, which was nearby, in order to remove several batches of prints which had been allowed to rinse all night. He stopped long enough to see what the amateur photographers were doing, then disappeared through the door leading to his studio. The men from the camera-club were glancing, now and then, at the object of their photographic interest; adjusting their cameras; looking at the sun; examining the image on the groundglass, and, most of all, studying carefully their various exposure-meters and guides. The question uppermost in their minds seemed to be, "How much time must I allow for this exposure?" They fussed and calculated, refussed and recalculated, until it got to be nearly 11.30, when Mr. Black emerged from the door of his building. Approaching the most industrious of the embryo artists, he said, "What's the matter? You seem more interested in studying, than making pictures." Book in one hand and pencil in the other, the owner of the camera replied: "I am trying to figure out how much time to give this picture. You see, I've got to get the F-value of the stop I am going to use, and I forgot to mark it (he was using the now obsolete, loose waterhouse-diaphragms). I am not quite sure of the equivalent focus of my lens, and the plate I'm using isn't listed among the plate-speeds of my exposure-guide. I'm all right on my light-values, time of day, and season of year. Of course, when I first came, the illumination on the church was just right; now, the sun has swung around and the light-effect is different. My calculations don't fit. I've got to change my figures and—" "Oh, Fiddlesticks!" snapped Mr. Black, at the same time approaching the young man's camera. With an impatient movement he put his head under the focusing-cloth, briefly examined the groundglass-image and asked what brand of plates was being used. "Carbutt B," responded the camerist, who recognized in Mr. Black a photographer of sound, practical knowledge. "All right, give her five seconds." "But, but," queried the astonished amateur, "how do you know that's the proper length of exposure?" "Common sense and experience," answered the expert. "If you would discard that book with its complicated tables and formulas; remember next time under what conditions you made your last exposure; do a little mental arithmetic, and make a good guess as to the amount of time you would need, you would come mighty near being correct. Supposing, for instance, you made up your mind that six seconds was about right, and you gave one second, more or less, you could adjust your development accordingly." "That's so," assented the camerist, who, oscillating a 9¾-inch pocket-pendulum—which, he said, had come from Mr. Wilfred French—gave the required five seconds' exposure. "But what puzzles me most," he continued, "is that you don't know anything about the focal length of my lens, nor the size of stop I am using, and yet you determine the correct time by merely looking on the groundglass." "Exactly so"; obligingly explained Mr. Black, "it's the degree of brilliancy of the image produced by the lens, regardless of whatever the conditions may be—character of object, light or lens, focal length, size of stop—that determines the amount of exposure to be given. Of course, the character and degree of sensitiveness of the plate in hand must also be considered. There are three makes of plates on the market now, and their character and behavior are pretty well known. In my studio I use Seed 26 and, for

MOTHER-BROOK, IN 1880 WILFRED A. FRENCH

my view-work, Carbutt B. My advice may not be scientific, but it's based on practice and works very satisfactory."

Our amateur's only exposed plate of the Old South Church (Carbutt B plate, 6½ x 8½ Ross Rap, Sym. lens, five seconds at F/22) proved to be the best negative made on that rather checkered field-day. As he could not be expected to acquire Mr. Black's practical experience in a few days, he did the nearest thing and discarded the book-form of exposure-guide in favor of a simplified and convenient one, in the shape of a thin, flat disk, invented by Hoover, a Rochester photographer. Similar devices — and inexpensive ones, too—are much in favor at the present time, such as the excellent Burt and the Harvey exposure-meters, as well as the new and ingenious Relio Exposure-Scale. They have been tested by the Editor and found to be quickly available and accurate, and much superior to any time-consuming guide in book-form.

The reader will understand, of course, that in most roll-film cameras no provision is made for a visible reflected image, except the one in the view-finder; yet this miniature image is utilized by experienced workers to determine the correct exposure. This refers, particularly, to the old-model box-finder, and not to the direct-vision nor to the brilliant type of finder. There are, however, several types of folding and reflecting-cameras which are adapted to the use of film-packs and dryplates. Having a groundglass focusing-screen, they enable the camerist to study the image, compose the picture and, by estimating the degree of illumination of the image, to determine the length of exposure.

The watch-form of exposure-meter, or actinometer, has obvious advantages; but unless the required tinting-paper is uniform in color and sensitiveness, the actinometer is of no use. As the tinting-medium consists of a specially sensitized paper, it deteriorates in time, and, if exposed to the influences of heat, moisture or contaminating chemicals at the photo-dealer's or, worst of all, at the drug-store, it is clear that the user must choose carefully his source of supply. Furthermore, to ensure success with the use of any timing-device, the camerist must be a good judge of the character of the object to be photographed, and of conditions of color, light and sky.

THE CURVING WOOD-ROAD
FREDERICK B. HODGES

The Curving Wood-Road.

Alzuma Whittemore Hodges.

The city-road, the country-road,
The road beside the sea,
But the road that leads one through the woods
Is the road of roads for me.

The rainy road, the sunny road,
The road of sunset-fire,
But the winding road through forests dark
Is the road of heart's desire.

The winding road, the curving road,
The road I dearly prize,
With every bend some vision new
Delights my wondering eyes.

The autumn-road, the winter-road,
The road of springtime-bloom,
But the woodland road in summertime
Sets all my heart in tune.

So all roads are good roads,
Each road has beauties rare,
But the curving summer wood-road
Is the road beyond compare.

EARLY MORNING — RAYMOND E. HANSON

A Provincetown Pilgrimage

RAYMOND E. HANSON AND HERBERT B. TURNER

WILFRED A. FRENCH is responsible for this pilgrimage to Provincetown. One evening, last October, he suggested to Mr. Turner that a photographic interpretation be made of the approaching tercentenary of the Landing of the Pilgrims, November 21, 1920, at Provincetown, Massachusetts.

Mr. Turner was selected, we presume, because he is a descendant of nine of the Mayflower passengers; is connected with the Massachusetts Society of Mayflower Descendants and, naturally enough, is interested in the early history of New England. The suggestion was received by him without enthusiasm at the moment. Later, he tried to pass the undertaking on to Mr. Hanson. The outcome of it was that we, jointly, decided to make the attempt, and we motored down to do what we could to make a picture-record—winter weather and all.

The equipment chosen was as follows: Mr. Hanson used a 3¼ x 4¼ Graflex, equipped with a 6½-inch Smith soft-focus lens, and a 3A Special Kodak with a II B. Bausch & Lomb Tessar of 7-inch focus and Mr. Turner selected a 4 x 5 Speed Graphic, I. C Zeiss Tessar and a 5 x 7 Revolving-Back Cycle Graphic with a 12-inch Smith and a 9-inch Protar. Mr. Hanson used Standard Orthonon Plates in the Graflex and roll-films in the Kodak. Mr. Turner used Wratten Panchromatic Plates and film-pack for the larger camera and Standard Plates and film-packs for the other. An Ansco Speedex with a Goerz Dagor was carried along to be used if a long focal length should be required. Tripods, exposure-meters and various filters were added, including a Wratten G filter (red); for Mr. Turner had an idea that it might help to cut out mist. Whether it would or not, we did not have an opportunity to learn, as the weather—contrary to our expectation—was generally fair and free of fog and mist.

That band of the Puritans, known to us as the Pilgrims, landed on the New England coast, for the first time, on the tip end of Cape Cod, where now stands the historic town of Provincetown. The date of this landing was November 21, 1620 (new time) or November 11, 1920 (old time). Therefore, in order to be on the scene some two hundred and ninety-nine years later it was necessary for us to be in Provincetown Friday, November 21, 1919.

We left Boston by automobile, Thursday morning, at 8.30 A.M. The day was clear and

cold. The night before, snow—the first of the season—had fallen, and this made the roads slippery as it began to melt and form puddles.

The road through Hanover was chosen as being the shorter route. We traveled over the long winding highway at a moderate pace through rural sections, all bare of foliage, grim and brown, through long stretches of monotonous second-growth woods and on to Plymouth of historic memory. Here we noted, in passing, the old burial ground of the Pilgrims; the monument rising aloft over the town; and the rock on which the Pilgrims first stepped—still intact, and guarded jealously by iron-railings against the attacks of souvenir-hunters.

From Plymouth on, the country is more diversified and much of interest to the pictorialist appears at every turn of the road. For some distance the highway, of smooth macadam, skirts the seacoast and then tends inward over hill and dale. Occasional glimpses of the tumbling billows of the blue Atlantic seen in the distance may be obtained from many points of vantage. Old houses of typical Cape Cod variety—small, compact, with great square chimneys, suggestive of the huge hearths within—make their appearance and are a prominent pictorial feature throughout the journey.

Passing through Sandwich and traveling in a generally easterly direction—making Barnstable en route—we arrive at Orleans, where the road bends sharply due north and so continues on through Wellfleet and Truro to Provincetown. On the left of the highway, in Wellfleet, a picturesque old windmill of Dutch type greets the eye. It stands solemnly by the roadside, eloquent of by-gone days on Cape Cod. Its wings are still, stripped bare of sail, and we guessed that its days of toil were over, many years ago.

WATERFRONT-SCENE HERBERT B. TURNER

The country now assumes a more rolling character. Successions of low hills confronted us, up and down and around which the road winds, with vistas here and there of great distances. On a bluff, at the left, are seen two ancient structures—one an old-time church, the other the townhall of Wellfleet. On the very brink they stand, silhouetted against the sky, dwindled to the size of toy-houses by the distance. Villages and small hamlets are dotted, here and there, over the country-side and, as we passed through them, all seemed to be very quiet and slumbersome; the inhabitants, save for one or two about the general store, were for the most part invisible. We wondered where they were, and what they were about. A great, peaceful tract of country this, unhurried, at rest,

drowsing under the late November sun. At last, upon mounting a low hill and rounding a bend, a grand panorama came into view, the graceful curve of the cape stretched before us—the waves breaking on the yellow sands of the beach along its entire length—and in the extreme distance, the clustered houses and shacks of Provincetown, with the Pilgrims' monument rising aloft from the low hill behind the old town. At the right of the road were the wind-swept dunes of yellow sand that passed in great rolling billows off to the far reaches of the east.

We rapidly traversed the shore and approached the town, entering the outskirts at 2.45 P.M. A few minutes' ride, down the narrow main street, brought us to the northern extremity, where a tablet on the shore marks the first landing-place of the Pilgrims. It was a lonely stretch of sandy beach, extending to the very tip of the cape, windswept, cold and desolate at this season of the year. It could not have been one of the most cheerful aspects in 1620, when Miles Standish first trod these shores! Sand-dunes may be seen from the landing-place across the marshes to the east, and southwards a fine view of Provincetown can be obtained.

On our arrival, at this spot, the sun was low and there remained very little daylight to begin our photographic labors. However, a few exposures were made, as the mellow light and long shadows lent themselves well to pictorial effects.

Mr. Turner used a soft-focus lens at an aperture of F/9 with a K-2 filter, first with a panchromatic plate, then with a film, after which he employed a 13-inch combination of a Protar with the same filter and a film. Mr. Hanson exposed two Orthonon plates, at F/8 with an 8-time filter and gave a half-second exposure. The subject was the town as seen from the beach, close to the Pilgrims' landing-place, and included some picturesque old trees in the left foreground. The panchromatic plate gave a more colorful rendering, but cut out more haze than was perhaps desirable.

LIGHTER-RAILWAY HERBERT B. TURNER

Our next move was townwards in search of a hotel; we stopped at the New Central House, where we were well accommodated with heated rooms and good meals. It is a quaint and curious old town which has arisen on the far end of Cape Cod. One long, narrow street with an endless variety of old cape-houses, shacks, and

FISHERMAN
RAYMOND E. HANSON

LANDING-PLACE OF THE PILGRIMS RAYMOND E. HANSON

stores on each side, runs the entire length. Numerous short, narrow streets, or we might say lanes, lead off at frequent intervals on the land-side; but on the shore-side, fish-wharves, stores, jumbles of shacks, barrels, lobster-pots, fish-seines, lumber-yards and shanties without number are crowded together promiscuously.

On a low hill in the center of the town, the Pilgrim monument of gray granite rises to a lofty height that commands the entire region. At the foot of the hill, in times past, was a small pond—long since disappeared—where the women-passengers of the "Mayflower" washed their clothes during their limited sojourn in Provincetown.

The town is pervaded with a strong atmosphere of antiquity, rich in suggestion of the olden days on Cape Cod, and past generations of Cape Cod folks. However, it is somewhat marred by a too liberal sprinkling of telephone-poles and electric lights. Portuguese fishermen in picturesque garb—rubber-boots, oil-skins or corduroy, dark, swarthy men—are seen on every side, in the street, on the wharves or chugging to sea in their motor-craft. The houses, although old, are well preserved, snug, and generally capable, we assumed, to protect their inmates from the biting cold and blustering winds that prevail here during the winter-months.

Inquiries as to the location of the famous spring, from which Miles Standish and his men first slaked their thirst in New England, led to no little bewilderment on our part. Everyone told us a different story. We found one man who swore he drank from it twelve years ago. However, the general opinion seemed to be that the spring was marked by a three-inch iron-pipe on a hillside, off the salt-marshes back of Pilgrim Heights.

With this information, we set out early the next morning—the historic November 21—in an attempt to find the elusive spring. We drove some four miles to the heights, crossed them and went down on the other side towards the sea. Here we found it necessary to leave the car and to proceed on foot. This we did, and we were heavily laden with cameras and tripods. The sun shone brilliantly out of a clear sky, melting the snow, which glistened in scattered patches over the broad expanse of russet-hued salt-marshes. We skirted three low, sandy hills, for a mile or more as directed, and got our feet wet; but could find neither the iron-pipe nor any sign of a spring. (Iron-pipe of three-inch dimension is no easy mark to hit upon in some hundred acres of marsh-lands!) But, perhaps, some of the summer-visitors, this year, may be more fortunate than we were. However, not to come home empty-handed, we exposed several plates on some very picturesque material, which consisted of a suggestion of old cart-road on the meadows and a fine grouping of willows, close to

THE TOWN FROM LANDING-PLACE HERBERT B. TURNER

the spot where the spring is reported to be. Both of us used, in this instance, the soft-focus Smith lens. Mr. Turner used both film and panchromatic plates, the latter yielding the better negative of the two.

From this hike, we could gain some conception of the appearance of the land when valiant Miles and his sturdy men—armor, homespun, top-boots, matchlocks and all—marched about among these same hills and frozen bogs in 1620. In primeval state a savage wilderness of low, rolling, wooded hills, sandy wastes, marshy jungles, and intricate dark forests, inhabited by ferocious wolves, dangerous bears, timid deer, wild-cats, ducks, geese, partridge, turkeys and, most fearful of all, the wild Red Men. The latter lived by hunting and fishing; his pet diversion was the war-path—wild foray against the outlying villages of his enemies. Many are the unchronicled combats fought in the dark depths of these forests in whose secluded aisles resounded the fierce war-cries and furious shouts of the maddened warriors—long centuries before the pale faces came, to conquer, subdue and civilize.

Agriculture—could it be so called—the Indian did practice, after a fashion. In the clear spaces, open to the sun, the squaws turned up the soil with crude iron- or bone-implements, and sowed their meager stores of beans and maize during the hot summer-months. However, the warrior disdained such lowly occupation. Taciturn and haughty, his energies were spent in the more manly occupations of the chase or the more hazardous enterprise of war. The Indian habitation was the wigwam of bark and skins, erected in the depths of the forest—sheltered as best it could be from the rigors of the climate. Here, during the long winter-days, the Indian brave would lie in slothful idleness, huddled near the hissing and sputtering fire of pine-knots which the squaws gathered, his eyes, no doubt, red and watery from the stuffy atmosphere of his smoky wigwam.

A land of mystery, of strange noises in the night; a bleak, cold land of frigid arctic blasts from off the open sea in winter; a warm, humid land of fragrant pines and aromatic shrubs, teeming with wild life in the summer months. And to this inhospitable shore in 1620 came the Pilgrims. Cape Cod, a huge arm flung to seaward; its great elbow bent,—where stands the present town of Orleans; its giant fist—the present site of Provincetown—half open, into whose iron-clasp the Pilgrims eagerly sought refuge from their two months of storm and

terror in the stuffy cabin of the Mayflower. Having dropped anchor in the harbor, the Pilgrims began at once to explore the shores where fate and the contrary winds had blown them.

Miles Standish and some fifteen of the more venturesome men rowed ashore in the ship's boat on the morning of November 21—driving in on the low, sandy beach where the tablet now stands on the extreme northern edge of the town. We may assume that it was a cold, bleak morning, with snow in the woods and a sprinkling, here and there, over the dunes. This handful of men, alone amid the unknown terrors of a new world, set out, along the beach, at first, in quest of a suitable place to establish a settlement. They had proceeded but a short way, when they discovered in the distance five or six Indians and a dog. The Indians discovered them at about the same time and took to their heels at once, mightily astonished, no doubt, by these strange apparitions. The Pilgrims, with Captain Standish in the lead, set out briskly in pursuit; but weighted down as they were with their armor, heavy boots and muskets, they were no match in speed for the scantily clothed savages. Seeing that they could not come up with the latter, and that night was setting in, the leader called a halt, and his small party camped in the sands for the night. They built a roaring fire of pine-logs around which they slept as best they could.

The following morning, at daybreak, they resumed the trail of the Indians. However, at the end of some hours, the trail was lost and the Pilgrim Fathers "falling into shuck thickets as were ready to tear their clothes and armor in pieces," as Bradford so aptly words it, found themselves at a loss in which direction to proceed. They were much distressed for water, and forthwith began a search for some spring or brook. After much thrashing about in the frozen bogs and thickets, they finally extricated themselves, and in a short time of diligent search hit upon a spring from which they drank their fill. This was the first water in New England of which they drank, and is now marked by an iron-pipe—some "three-inch pipe on a hillside somewhere off the marshes," we are told.

The next venture was to cross the cape, which they did without mishap. And it was on this trip that they found the pond of fresh water and the Indians' stores of corn and beans, which they dug up and appropriated to their own use. Having discovered what they could, they now returned to the ship amid general thanksgiving, and related their adventures in the drear, bleak land they had traversed. The shallop, brought over from England in the Mayflower, was now, thanks to the diligence of the carpenters, ready for sea. After a brief rest, Captain Standish embarked in the little craft and once more set out to learn more of these gloomy shores. The Pilgrims beat around the cape to the shore they had discovered on their first expedition; but found that the harbor was not to their liking. However, they landed, to look about. Tramping inland upon the low wooded hills, they stumbled onto two Indian wigwams with mats and "sundry of their implements," and more corn and beans, which they took, "proposing to give them (the Indians) full satisfaction when they should meet with any of them, as about some six months afterward they did, to their good content." (Bradford.)

The ground was now all covered with snow and frozen hard, and they hastened to return, it being high time to effect a permanent landing and prepare a settlement against the rigors of almost arctic winter which was coming upon them.

Accordingly on December 16 they embarked once more aboard the shallop and set out to circumnavigate the bay. It was intensely cold, and snow-blizzards threatening from the dull gloomy clouds which obscured the sun, and made more dreary the vast solitude of these old New England coasts. The spray, that came aboard as the shallop plowed the choppy sea, froze on the men's coats, and covered the rigging with ice—no pleasant sailing, this! That night getting "downe into ye botome of ye bay as they drue nere ye shore, they saw some ten or twelve Indians very busie aboute something." (Cutting up a fish, as it afterwards proved.) They came ashore, and landed some distance from the Indians. Another night had settled over the forests, black, cheerless and threatening. A barricade of logs was erected; a great fire was lighted and it crackled there amid the gloom of the dark woods, throwing its fitful, ruddy light upon the none too cheerful faces of this isolated little band of adventurers. Far down the shore gleaming yellow out into the night, they could see the camp-fire of the Indians. Huddled around the blaze, sheltering themselves as best they could from the violent gusts of brisk salt-winds from the sea, the Pilgrims awaited the dawn. At last when it arrived, they set out once more on their travels, some by land and the remainder by sea in the shallop. This day, the land-party tramped through the forests without incident worthy of note. At nightfall, they left the wood and came out upon the shore where, seeing the shallop hard off the coast, they signaled her to put in to a nearby creek. When

THE PILGRIM SPRING RAYMOND E. HANSON

this was accomplished, the camp was made, a barricade thrown up as on the preceding night. Near twelve o'clock, an alarm was sounded by the sentinel. Frightful yells resounded from the black depths of the forest. The camp sprang to arms, a couple of matchlocks roared with loud detonation that split the ear of night and effectually silenced the Indian yells in the wood. The quiet of the wilderness was again unbroken save for the sighing of the wind through the pines. At five the next morning, following prayers and breakfast, they were preparing to depart, when the alarm was again given, the sentinel rushing in with a cry of "The Indians!" Once more the woods rang with the fierce war-cry of the Red Man, but with added vigor, and accompanied by the flight of feathered arrows into the camp. Then followed a hot tumult for several minutes, with much exploding of gunpowder, roaring of guns and twanging of bow-strings. One attack the Indians did essay against a party of defenders who ran to the boat for their armor and muskets; but they could accomplish nothing, being driven off in hot haste with cutlass and musket-ball. The hurly-burly ceased as suddenly as it began, the Indians skulking off into the depths of the forest. The strange thunder turned loose by the white men was little to their liking and far beyond their comprehension. Save for the white powder smoke drifting up into the frosty air, nothing remained as a reminder of the scrimmage. Neither white man nor Red Man was hit—bad marksmanship all around!

Much elated at their easy victory, the Pilgrims got their little band safely embarked again in the shallop, determined from here on to proceed by sea. After much buffeting, breaking of their rudder, and steering with difficulty with two oars, they arrived storm-tossed and weary in what is now Plymouth Harbor. They landed in drenching rain, and not without difficulty, on what is now known as Clark's Island. Somehow or other, they managed to light a smoky fire with the soaked wood, and spent a most wretched

PANORAMA RAYMOND E. HANSON

night. The rain continued until near morning, when the wind changed to the northwest and it came off cold and froze. During the forenoon, they succeeded in effecting a landing on the mainland. They explored hereabouts and decided that this place was a suitable site to settle (December 21, 1620). The shallop then returned to the ship which set sail and put in here at Plymouth on the 26th of December and let go her anchors.

Such, briefly, is the history of the Pilgrims' first travels on Cape Cod. Here we must leave them, amid the protracted cold of the long winter of these latitudes and the stirring dangers lurking in the trackless forest; to build their rude log-cabins and to begin their settlement as best they can; to hunt the turkey and deer for meat; to gather the bayberries—abundant along the coast—for candle-making to light their log-huts on the long, cold evenings, and, in general, to prepare for the bringing of civilization to a savage land—pioneers of freedom, at liberty to worship God after their own fashion and unhindered by the tyranny of earthly Kings.

To return from this digression. Having failed to locate the "three-inch iron-pipe" that marked the spring, we returned to Provincetown and roamed about the water-front and side streets, making many pictures of characteristic bits, here and there. From the hill, where the monument stands, we obtained several panoramas of the town below. Much picturesque material is to be had in Provincetown; but for wharf-scenes and marine-views of this type, it does not seem to us to compare favorably with the wealth of pictures to be found on the water-front of Gloucester on Cape Ann.

The town by night is lighted by electric lights, from end to end. Most of the shops are dark, and the streets for the most part deserted at this season of the year. A motion-picture theater blazens its attractions to the passerby with the usual glaring billboards.

On the morning of the 22d we left Provincetown, after making a few last exposures, and got ourselves in motion again southwards. Some two miles out, we stopped for an hour or so to search for picture material among the great waste of sand-dunes before men-

STREET-SCENES
RAYMOND E. HANSON

OLD HOUSE, DUXBURY — RAYMOND E. HANSON

tioned. The light was poor and gray clouds obscured the sun; but the dunes were very interesting with their graceful contours, and lonely spirit which seems to brood sadly over these vast solitudes.

Our next stop was in Truro, where upon inquiry at the village postoffice we were directed to Corn Hill, some distance towards the sea on our right. We saw where the corn was said to have been found; but little in this vicinity appeared of particular interest, and we continued our journey. Passing through Wellfleet we found the old windmill in that town well worth a few exposures, made in the same gray November light which had confronted us earlier in the day among the sand-dunes.

Well on towards noon, we arrived in the tiny village of Orleans. The hotel was closed and no luncheon was to be obtained, so that recourse was had to the grocery-store where, on crackers and cheese, washed down with ginger-ale, we had a most frugal repast.

Taking the road to the left from Orleans, about an hour's drive brought us out upon the south shore of the main arm of the Cape at Chatham, famous as a summer-resort but, at this season of the year, deserted and lonely. The long reach of beaches with closed cottages seemed to brood over the past summer-gaieties.

On the outskirts of Hyannis, an hour's journey further along, stands the oldest windmill on Cape Cod. A sign of huge dimension—for the convenience of photographers, no doubt—stands conspicuously before the mill. So craftily is it placed, that to compose a picture here is well nigh impossible. We maneuvered around this obstruction in every direction and did what we could to picture the old mill. It was a venerable mill,—gristmill, to be exact—ruddy and weather-beaten, vine-covered now, with sails removed. It was known to be at least two hundred and fifty years old as a nearby house-painter informed us. What memories of the past might it not reveal, could its old ruddy-hued hulk suddenly come to speech! In its day it was transported from one town to another on the cape—to Sandwich for one—and at last it was brought here to the plains of Hyannis—come to rest finally, its work done for all time. Mightily it labored in those old days, in stolid Dutch manner, with all sails set against the brisk ocean-breezes, grinding the corn-harvests for generations of

OLD WINDMILL, HYANNIS HERBERT B. TURNER

Cape Cod folks. We were told that it could be used even now, were its services required. Its sinews are still stout and in working order—a staunch old patriarch and a credit to its builders.

Outside of Hyannis, we took the road to the north and crossed the cape to Barnstable on our return-trip to Boston. By four o'clock we were again in the historic town of Plymouth, and as night was coming on cold and bleak, and Boston still about forty-eight miles away, by the nearest route, we decided to lay over here until morning.

Sunday morning was fair and sunny. We set out for Boston by way of Duxbury and Scituate. In the former town we saw the famous monument to Miles Standish, visible for miles around—a permanent landmark and memorial to the doughty warrior of the Pilgrims, who made his home in this town, some time after the settlement at Plymouth. Just off the highway, in Duxbury, we came upon a very picturesque rural scene—an old country-road with a rustic, cabin-like house on one side and woods on the other, all flooded with morning-sunshine. We photographed the scene, using an 8-time filter, a half-second exposure at aperture F/8 with the Smith lens.

Along the shore, in Duxbury, it is delightful. Fine summer-estates, and diversified coastline, accompanied by the quaintness of old New England coast-towns, make it an ideal summer-resort. Arriving in North Scituate, we took the shore-road and spent some time driving about viewing the summer-colony here. After this, we returned to the main highway and proceeded on through Cohasset, North Cohasset and Hingham to Boston, where we arrived about 2 P.M. at the end of our journey.

SAND-DUNES

RAYMOND E. HANSON

EDITORIAL

Individuality in Business-Methods

PHOTO–ERA has been called by one of its friends, "The Magazine of Individuality." That it is not, what has been said of certain newspapers, the result of "paste-pot and shears," must be evident to any intelligent reader. The Editor's personality is discernible, for he takes a personal, practical interest in every item, large or small, that forms a part of the magazine. The editorials are all from his pen, and so are other departments and paragraphs. Of course, there is always a conscientious effort to have that individuality appear on the side of excellence; for inferiority in workmanship and arrangement, and faultiness in diction and orthography, may justly be regarded as evidence of incapacity, indifference or carelessness.

The endeavor to escape convention is what marks the successful merchant, purveyor or man of business who, instead of imitating the arts of his competitor, tries to be original. This desire for innovations is seen everywhere in the big cities—in the shop-windows, for instance. It is an art to arrange articles of merchandise attractively and temptingly, and a skilled window-dresser is a person who commands respect and a good salary. What an effect is produced by the appearance of the display-window of the photo-dealer, every observant camera-user knows. There is also the method of approach in the attempt to get new customers, and, naturally, in the manner adopted to hold old ones. There is much to be said, too, with regard to the kind of circulars and business-notices sent out by the enterprising photo-finisher, and the manner in which he conducts his correspondence, particularly with reference to answering replies to advertisements. All depends upon the impression he makes on strangers. Here, promptness and clarity, courtesy and brevity, will be found matters of the highest importance. All the same, this method of getting business may admit of improvement upon what the other fellow has been doing—with more or less success. One particular, on which all will agree, is that letterheads and certain enclosures shall be tasteful and simple, and suggest the artistic nature of the business of photo-finishing. The statement can be truthful and unique at the same time. If the photo-specialist happens to be a person of artistic taste, and formerly a successful camerist, so much the better. He will find it not only valuable in the class of work he produces, but in his advertising. In the absence of such an asset, the enterprising dealer or specialist can obtain suitable suggestions from almost any of his artist-customers, in consideration of a suitable *quid pro quo*.

Public-Spirited Camera Clubs

THE suggestion that camera clubs constitute themselves as a means to help improve the appearance of the parks, squares and streets of their city, was first advocated by PHOTO-ERA, eight years ago, and mentioned many times since. It was shown how much, including the correction of official neglect, could be accomplished with the aid of photographs made by public-spirited camerists. On the other hand, if a city excelled in the beauty and decorative appearance of its park-system and other public property, the fact could be published to the world in the interest of the fortunate community. Much along these lines has been accomplished by camera clubs of certain American cities, with consequent benefit to the communities concerned and credit and profit to the groups of photographers responsible for the suggested improvements. There can be no progress without publicity of the right sort, and, although the press is an acknowledged power, no argument is so cogent, or produces an effect at once so impressive and convincing, as a well-made photograph.

The opportunities for camera clubs to participate in public service are numerous. Not only that, but some of these activities are really congenial. Besides, the work need not engage the attention of each member of a camera club. It can be distributed among members to whom it appeals, whereas a different class of activity can be assumed by other members. One of the latest and best exemplifications of this spirit of coöperation is the report—in pamphlet-form—of the public park commission of a large eastern city. It is illustrated with photographs made by eight members of the local camera club to whom full credit is given. An account of this contribution to civic welfare, with suitable illustrations, will be printed in an early issue of PHOTO-ERA.

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Advanced Competition
367 Boylston Street, Boston, U.S.A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. ***No more than two subjects may be entered, but they must represent, throughout, the personal, unaided work of competitors. Remember that subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface are not suitable for reproduction, and should be accompanied by smooth prints on P. O. P., or developing-paper having the same gradations and detail. All prints should be mounted on stiff boards.

3. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name and address, the title of the picture and name and month of competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks sent for a 2c. stamp.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, this does not prevent the photographer from disposing of other prints from such negatives after he shall have received official recognition.

6. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind—or with thin wood-veneer.* Large packages may be sent by express.

7. Competitors who have won three first prizes within a twelve-month, become ineligible for two years thereafter. The too frequent capture of the first prize by one and the same competitor tends to discourage other participants and to make the competitions appear one-sided and monotonous.

Awards—Still-Life Competition
Closed February 28, 1920

First Prize: None awarded.
Second Prize: ROSS W. BAKER.
Third Prize: CHARLES A. HUGHES.

Honorable Mention: A. C. G. Allison, Joseph Bonanno, Fannie T. Cassidy, F. H. Chant, Daisie B. Chapell, Frederick Charavay, John Dove, James V. Dunham, James M. Edsall, Harry Footner, G. W. French, Geo. M. Gerhard, Henry H. Hussey, Emil and Edouard Kopp, H. E. Lovick, Guy E. Osborne, Dr. J. B. Pardoe, Chas. H. Partington, Kenneth D. Smith, Charles F. Spellman, W. Stelcik, J. A. Thompson, E. J. Webb, Elliott Hughes Wendell, Louis Werner, Jr.

Subjects for Competition—1920

"Twilight-Pictures." Closed January 31.
"Still-Life." Closed February 28.
"Nature-Studies." Closed March 31.
"Rainy-Day Pictures." Closes April 30.
"Miscellaneous." Closes May 31.
"Speed-Pictures." Closes June 30.
"Rural Scenes." Closes July 31.
"Shore-Scenes." Closes August 31.
"Outdoor-Genres." Closes September 30.
"Architectural Subjects." Closes October 31.
"Domestic Pets." Closes November 30.
"Indoor-Genres." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup, of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Competitors Must Mind the Rules

COMPETITORS, in the Advanced Workers' and Beginners' Competitions, continue to ignore some of the rules, one of which is that the name and address of sender, also name, month and kind of competition must be written plainly on the back of each print. Otherwise, how is the jury to know? Besides, the Editors are too busy with other matters to stop to write to the careless competitor for missing information.

THE CUP THAT CHEERS — ROSS W. BAKER

SECOND PRIZE — STILL-LIFE

Clean and Foggy Lenses

"Why is it that my camera will not make as brilliant pictures as it did a year ago?"

Those of our readers, says *Kodakery*, who have asked this question are probably fortunate enough not to need eye-glasses, for wearers of glasses know, from experience, that the cleanness of their glasses determines the clearness with which they can see.

Those who do not wear glasses will, perhaps, best appreciate what a dirty or foggy lens will do to a picture, by cleaning part of a soiled window-pane and then looking out on a sunlighted scene through the clean and then through the foggy parts of the window.

Lenses are made of glass, and all glass, whether it is the kind used for making window-panes or the kind used for making lenses, becomes coated with a filmy deposit on prolonged exposure to the atmosphere. This is due to various causes, but the one that can most easily be observed is the condensation of moisture on window-panes which, on drying, makes the glass look foggy.

When a camera that has been out in the cold is taken into a warm room it should be kept closed for several minutes, so that the temperature of the lens will change slowly and none of the fine dust which is ever present, though it may be invisible, in living-rooms, becomes attached to the lens by condensing moisture.

Lenses do not condense moisture when they are suddenly taken from a warm room into the cold out-door-air in winter. Condensation only takes place when the condensing surface is colder than the air in which the moisture is suspended.

Since the temperature of glass changes more slowly at all times of the year than the temperature of the air, lenses are constantly acting as condensers of moisture, and it is best to examine them often.

The first thing to do toward cleaning a lens is to remove any dust which may be on it. Use a camel-hair brush for dusting. This is important, as removing dust from a lens by rubbing it with a stiff cloth or with a brush will be apt to scratch it.

After the dust has been removed breathe on the lens and wipe it with a clean, well-worn linen handkerchief which has been made soft by repeated laundering so that it will not scratch.

Lenses should never be wiped with any stiff cloth or with silk or chamois skin, nor should paper ever be used, unless it is the kind especially made for the purpose, and has been purchased from a dealer in optical goods.

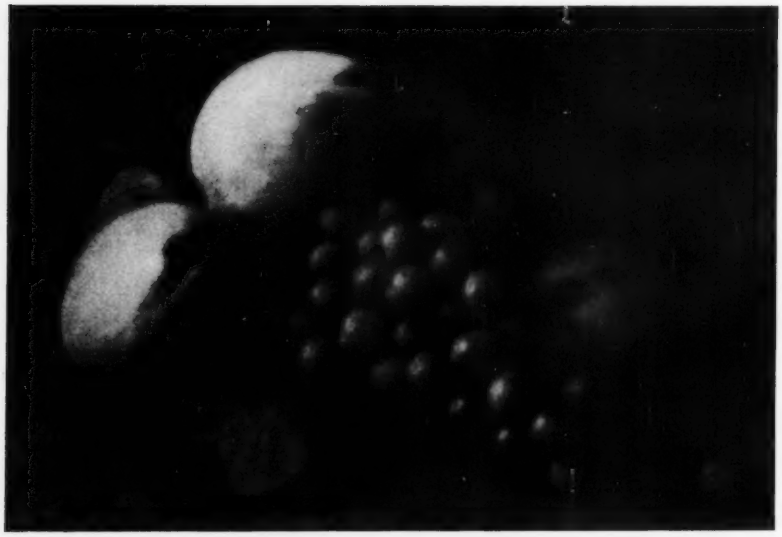
Never clean a lens with alcohol or any kind of acid, and never use any kind of polishing-preparation on it, or it may be necessary to send it to the maker for repairs —which may prove expensive.

It is not often necessary to take a lens out of the shutter or the barrel in which it is mounted, as it is only the outer surface which is apt to become foggy, but if both the inner and outer lens surfaces do need cleaning be sure to remove and replace one combination before removing the other. If the combinations are transposed, so that the front combination is placed where the back one belongs, and the back combination is placed where the front one belongs, the lens will, in all probability, be useless until the combinations are placed where they should be.

Never remove a lens from its cell—the metal rings that hold it—for if this is done the lens may have to be sent to the maker for repairs.

Single lenses that are mounted behind the shutter are often built into the camera, so they cannot be removed. They can be cleaned with a piece of handkerchief wrapped around the head of a small pencil-shaped brush after the shutter has been opened as for a time-exposure.

Since foggy lenses make foggy-looking negatives and since it takes a brilliant negative to make a clean-cut, brilliant print, it is important that you should keep your lens clean.



FRUIT — CHARLES A. HUGHES

THIRD PRIZE—STILL-LIFE

Quality in Bromide Prints

PHOTOGRAPHIC quality cannot be defined as a standard result from a standard negative, says an English cotemporary. From a scientific point of view a piece of Bromide paper exposed for the correct time behind a negative, and developed so that all the light-action has been reduced or blackened, should give a perfect result of a standard quality, but in ordinary every-day work these rules are often broken.

Every good photographer concentrates on producing —apart from the art-side—technically good prints, and in most cases he is guided by the actual gradations of the subject or object itself; but it is often found that the negative does not truly reproduce the correct tone-values or gradation of the subject. Again, there may be a desire on the part of the photographer to emphasize some points of the picture in the same way as in rhetoric, where certain words are emphasized, or in histrionic art, where certain gestures are exaggerated. The practical man will, in order to obtain the desired result, resort to methods of control, or use a grade of paper that will by direct or controlled development give him a print combining proper rendering of tone with the equally important photographic quality.

It is a recognized fact that when Bromide prints are required for toning by the sulphide-process no "monkeying" with the developer, or alteration in the full development time is permissible, consequently the only method of altering the rendering of the relative gradations of the negative—apart from mechanical control—is by choosing a grade of paper whose characteristics are soft or hard as may be required.

The photographer who specializes in warm black prints finds that the orthodox development to time with a normal developer does not give him the special tone. He therefore uses the special grades made for the purpose, and resorts to increased exposure and restrained development, at the same time always aiming to obtain what that well-known critic, Mr. F. C. Tilney, calls "fatness of the darks," a phrase that aptly describes photographic quality.

A worker will deliberately falsify the gradations of a negative on business-grounds, as a vigorous gaslight-print of good depth from a thin negative is a better selling proposition than a gray, or greenish, flat Bromide print, and similarly a well-exposed Bromide print from a harsh, dense negative, will surely bring more "grist to the mill."

From an inspection of photographers' window-specimens we note a great improvement in the quality of the Bromide prints, and that the flat, muddy prints are conspicuous by their absence, but we often come across prints that are too harsh. The blacks are intense and blocked up, merging steeply into the highlights which are devoid of detail.

The Gum-Bichromate and Bromoil processes offer infinite scope for individualism, but none the less we contend that Bromide and kindred development-papers offer to the photographer, who has no special manipulative skill in drawing, great possibilities in controlled results by the judicious choice of grade of paper and method of working. The good quality of modern development papers makes it an easy task to produce prints full of photographic quality.

Why No Prizes Were Awarded

PARTICIPANTS in the Advanced Workers' Competitions never know why their pictures won only Honorable Mention instead of one of the three prizes, unless they ask to have them criticized, and thus learn the reason. This question was discussed editorially and at length in February, 1920, PHOTO-ERA and should prove of interest to every competitor, past and future.

HONORABLE MENTION
STILL-LIFE

FINAL INSTRUCTIONS GEORGE W. FRENCH

Shading

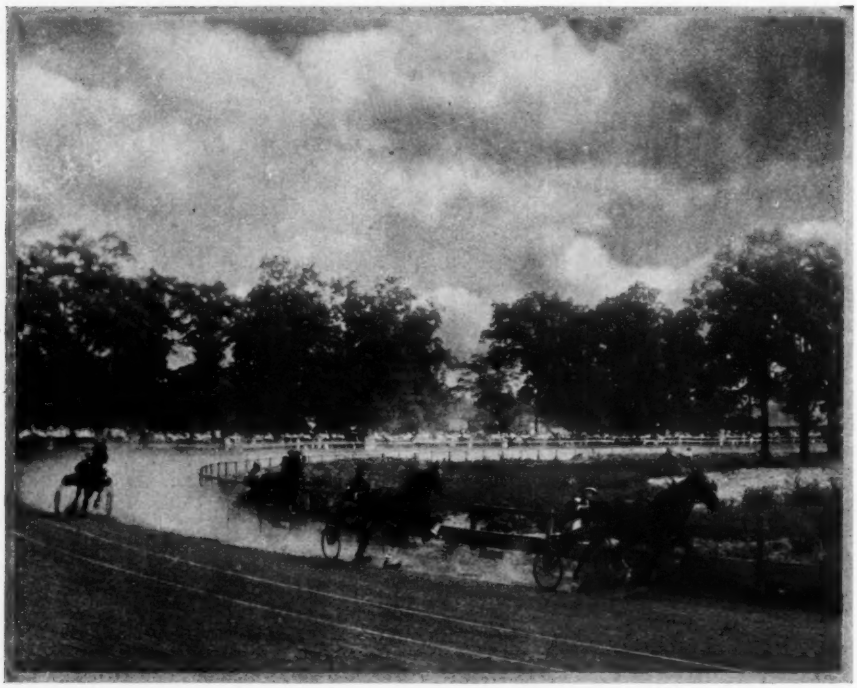
IT is a matter of some difficulty when shading a part of a negative in printing to prevent a more or less hard outline where the shaded part merges with the rest of the picture, says *The British Journal*. When printing-out paper is employed, the usual and the more satisfactory method of shading during the exposure is by the use of a piece of card moved backwards and forwards over the part of the negative that it is desired to retard; yet this plan tends to give hard edges. A good way to avoid this defect is to cut a series of fairly deep saw-like segments into the card at its edge, bending these in an upward and downward direction alternately. This idea is based upon the old-fashioned paper-mask or vignette used years ago, the edges of which were cut in the same fashion as the teeth of a saw. It will be found that if the plan mentioned above is carried out, and the printing-frame kept in a fairly weak light during the exposure, a very much softer result will be obtained and probably one that will give no indication that shading has been done. With developing-papers it will also serve, provided that the printing-light is well diffused and the card kept in motion. Of course, the idea cannot be carried out with the printing-machines and boxes that are so much used to-day. If a negative needs local shading, the printing-frame should be employed. The above method will be found to repay a trial.

Print-Surfaces

MANY photographers place much of their best work at a decided disadvantage, comments *The British Journal*, through neglecting to pay more attention to the surface of the printing-medium. Years ago there was little or no choice allowed among the printing-papers that were commercially available; but at the present time the reverse is the case. We find one of the best-known bromide paper-manufacturers listing over thirty different grades and surfaces of paper, and such a selection of surface is of immense value to the discriminating artistic photographer in presenting his work to its best advantage. In ordinary portraiture the selection of the surface of the printing-paper becomes of the first importance. For a dainty sketch-portrait of a feminine sitter or a child there is nothing to equal a print on a smooth matte or cream-base paper, and in the case of large head-studies of elderly people a rough surface is decidedly pleasing, for it has the effect of breaking up rough patches of skin, of covering up much of the work of the retoucher, and of adding a texture to the print that is thoroughly in keeping with it. Moreover, as prints are nearly always of fair size, and are viewed from a distance, for such, a rough paper is in every way suited. Other examples could be cited, but enough has been said to show the photographer the real importance of discrimination in choosing the surface of his printing medium.

SUBJECT FOR NEXT COMPETITION

ADVANCED WORKERS



THE LAST QUARTER — H. B. RUDOLPH

Advanced Competition—Speed-Pictures
Closes June 30, 1920

For several years, the competition devoted to speed-pictures has been omitted because other subjects seemed to be of equal or greater interest to most of our readers. However, there now seems to be a sincere desire among many workers for a competition that will enable them to add the element of motion to the usual problems of exposure and composition. To help realize the expectations of these friends, we have arranged this competition and no doubt it will prove to be one of the most popular contests held in recent years.

The usual interpretation of the expression, "speed-picture," is that the subject—whatever it may be—is rushing along at a tremendous rate. The average camerist visualizes an express-train, airplane, motor-boat race, baseball game or tennis-match. In great measure, this interpretation of the term is correct; but in this competition we have decided to include *all subjects in motion*. That is, a man walking along rapidly would be an acceptable subject—other things being equal. Obviously, if there were no particular technical or artistic interest attached to the act of walking on the part of the man, this subject would fail to find favor with the judges. I do not mention walking because it would prove of exceptional interest, but to emphasize our intention to include subjects that are not usually considered to be speed-pictures.

With the approach of the summer-season, there will be countless opportunities for the camerist to obtain pictures in which the subject of a picture is in motion.

Although two kittens at play will not tax the maximum shutter-speed of a Graflex, there is apt to be plenty of motion and interest. Such a subject is well within the reach of a modest shutter-speed such as may be found on cameras of moderate price. Of course the element of excitement, though not of charm, is lacking. An auto-race is no easy subject to photograph successfully, even with the best equipment; and comparatively few of our readers have the time or inclination to devote to this strenuous branch of speed-photography.

In this connection, may be mentioned pictures of baseball games in which a player is caught in mid-air in an effort to stop the ball or in which he is sliding "home" in a cloud of dust. Pictures of this kind cannot be made by the average camerist because he does not have access to the points of vantage from which such pictures must be made. Besides they have been made familiar through the sporting-pages of the daily press. However, pictures that show the subject moving at high speed are welcome and have their rightful place in this competition. Many of our readers are press-photographers and these men often face great danger to obtain speed-pictures that portray realistically the excitement of the onlookers and the physical tenseness of the players in a football-game; the landing of an airplane; the rush of fire-apparatus or the trial-trip of some battleship. There are amateur photographers, too, who have run great risks to obtain speed-pictures and we should like to receive contributions from them. In short, those who have the opportunity and who possess the necessary equipment to make speed-pictures should send in their best work for the benefit of all.

It cannot be denied that high-speed pictures possess an indescribable fascination for most of us; but there are many subjects that are speed-pictures that obviate the necessity to risk physical injury or the need to have an expensive outfit. Can anyone imagine a more beautiful picture than a laughing happy little girl running open-armed toward her mother or a group of children romping on a lawn. Then, again, there are the pets of a household who may be counted upon to frisk and play for the benefit of the camerist. Let me mention a case in point. In my home there are two cats and a dog. This trio are the best of friends. However, when all three are out on the lawn, the dog delights to chase one or both of the cats—much to the evident pleasure of all concerned. The sight of both cats—apparently in terrified flight—pursued by the dog is one to cause passers-by to stop in consternation until in another instant all three are seen to be rubbing noses, as much as to say, "that's one time we fooled 'em!"

A railroad-train has ever been a popular subject for the camerist who wishes to make speed-pictures. The advantage that this subject possesses over many others is that it may be photographed virtually with any equipment provided that the camerist selects his point of view carefully. The fact that a train must follow the rails makes it possible for the worker to decide with accuracy at what rate of speed the train shall pass the camera. By that I mean, if he photographs the train as it approaches, head-on, he will require no high-speed shutter to "stop" the motion. On the other hand, if he wishes to make a picture at an angle of forty-five degrees he will require a focal-plane or other high-speed shutter. There is always something of the spectacular about a railroad-train in motion, especially if clouds of steam and smoke are belching from the smokestack of the engine. Although I have seen hundreds of railroad-trains in this country and in Europe and have traveled many thousands of miles, I still turn eagerly to watch a train whenever one passes near me. I have no doubt that there are many camerists who evince a similar interest, and for this reason I believe that there are many who should be able to photograph railroad-trains in an interesting and original manner.

Among the popular summer-sports none lends itself to speed-photography better than swimming. Whether the camerist attempts the portrayal of a stalwart swimmer preparing to battle with an approaching "roller" or the more graceful fancy diving of an expert "mermaid," he will find much good subject-material of value and general interest. Moreover, the photography of ocean-waves, as they hurl themselves against the rocks or break on the sandy beach, may be considered speed-pictures. Flying spray, dashing waves are certainly in rapid motion and must be photographed accordingly. William S. Davis has contributed several practical papers in the August 1908, July 1910 and September 1915 PHOTO-ERA. Katherine Bingham called attention to speed-photography in her articles in the April and June 1915 number. The well-known writer, C. H. Claudy, gave PHOTO-ERA readers three excellent articles in the April 1908, January and April 1911 issue. Pictures of hydro-planes alighting on the water make exceptionally good subjects; for, if they are photographed carefully, they may be made to possess all the grace and beauty of a bird. Yacht-races lend themselves admirably to the requirements of this competition. There is no subject that is of greater general interest than a racing-sloop careened to leeward, with all sails set—including the enormous balloon-jib which seems to lift the vessel out of the sea. Motor-boat races offer additional material to the camerist, although it cannot be said that the average motor-boat race is a beautiful sight. It might be exciting and intensely interesting, but it lacks the grace and beauty that is added to the scene by the wind-filled sails. Canoe-races, water-sports and college-regattas are well worth the attention of the camerist.

Those who are eager to add an element of danger and excitement to the making of speed-pictures should attempt to photograph the wild-life of our shores, fields and forests. By referring to W. J. Jaycock's masterpiece, "Out of the Clouds," page 67, February PHOTO-ERA, the camerist may see the magnificent possibilities that are before him in the photography of shore-birds on the wing. No doubt many of our readers have seen the Chester Outing series of educational motion-pictures in which wild animals of the north woods are shown in their native habitat. One showed several moose, deer and bears at rest and in precipitate flight amid the beautiful scenery of the Canadian Northwest. Another, depicted a fisherman "playing" a large trout—it was a lively contest until the fish was landed safely in the net. Obviously, the camerist could not record such a scene in its entirety; but he could portray the final dash of the struggling trout and the skill of fisherman. A leaping fish is no easy subject to photograph, and the camerist will require much dexterity and a high shutter-speed to obtain satisfactory results. A picture that I remember to have seen and that made a deep impression was one of a large flock of flamingos in full flight over a palm-encircled Florida bayou. It was an inspiring sight even in the photograph. A resourceful worker should be able to make original pictures of flocks of birds during the migration-seasons of the year. Perhaps, one of the most fascinating pursuits of the lover of speed-pictures would be the attempt to photograph some of our American game-birds at the instant that they are flushed from cover. An excellent example of such a picture is "Holding a Point" by Howard S. Adams in May 1914 PHOTO-ERA.

It would be possible to enumerate other ways and means to obtain attractive speed-pictures; but I believe that the suggestions I have advanced will lead the enterprising camerist to discover many others. We feel sure that those who have asked for this competition will co-operate with us to make it a pronounced success.

A. H. B.

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Beginners' Competition
367 Boylston Street, Boston, Mass., U. S. A.

Prizes

First Prize: Value, $2.50.
Second Prize: Value, $1.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Subject for each contest is ***"Miscellaneous"***; but original themes are preferred.

Prizes, chosen by the winner, will be awarded in photographic materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. This competition is open only to beginners of not more than ***two*** years' practical camera-activity, and whose work submitted here, is ***without any practical help from friend or professional expert.*** A signed statement to this effect should accompany the data.

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints from 2¼ x 3¼ to and including 3¼ x 5½ inches, and enlargements up to and including 8 x 10 inches.

4. Prints representing ***no more than two different subjects,*** for any one competition, and printed in any medium except blue-print, may be entered. They should be simply and tastefully mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface paper are not suitable for reproduction, and should be accompanied by smooth prints on P.O.P., or developing-paper having the same gradations and detail.

5. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism at request.***

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, he may dispose of other prints from such negatives *after* he shall have received official recognition.

7. *Each print entered must bear the maker's name, address, instructions, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type, and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks sent for a 2-cent stamp.* ***Be sure to state on the back of every print for what contest it is intended.***

8. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board—not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express.

Awards—Beginners' Competition
Closed February 28, 1920

First Prize: OZAN K. NUNOME.
Second Prize: G. A. SMITH.
Honorable Mention: F. P. Adams, Thos. K. Flanagan, Carrie A. Ritter.

The Beginners' Great Opportunity

IN the closing paragraph of my article for the Advanced Workers, page 201 of April PHOTO-ERA, I referred to Kipling's masterful story, "The Ship That Found Herself." In it he describes how a new vessel made her first voyage and how each bolt, rivet, stanchion, deck-beam and spar discovered its special function and learned to work harmoniously to make the great ship staunch and speedy. In this story, there is a great lesson which may well be taken to heart by the beginner who stands at the threshold of his first photographic season.

We will assume that the beginner has mastered the rudiments of camera-manipulation, that he knows a few of the principles that govern the use of the lens, shutter and diaphragm-stops, and that he is able to make a fair picture under average weather-conditions. Moreover, we will assume that he can develop a roll-film or plate and make a satisfactory print. Up to the present, he has devoted his entire energies to the mastery of technical fundamentals. He is like a violinist who knows how to attune his instrument to a great organ and who now stands before his audience ready to play his first concerto.

At this point in his photographic career, the beginner resembles Kipling's beautiful, new ship that is about to begin her first voyage. Everything that is humanly possible has been done to enable the ship to meet the onslaught of wind and wave—she sails out into the broad Atlantic to meet her test. Likewise, the beginner is about to meet his photographic test. If his preparatory work has been thorough, he will meet adverse conditions and overcome them; if not, he will go down to photographic defeat. I am not playing on sentiment by using this simile; I am dealing with practical facts. If the beginner is enough of a businessman to desire a fair return for the time and money he has invested, he will try to find himself, photographically, this coming summer.

In a measure, the subjects he decides to photograph will depend upon his environment. If the beginner spends his vacation-days at the seashore he will, in all probability, make more marines than landscapes. On the other hand, if the mountains prove to be more attractive than the seashore, he will seek his subjects among the woodlands or along the banks of some mountain-stream. In either case, he will have the opportunity to make interesting human-interest pictures. In this connection, let me caution the beginner not to make mere record-pictures of friends or family. A group that is worth photographing, is worth intelligent effort. Thousands of summer-snapshots become valueless in after-years because they include only casual acquaintances and have no technical or artistic merit. A snapshot of a total stranger

INTERESTING ARTICLE — OZAN K. NUNOME

FIRST PRIZE—BEGINNERS' COMPETITION

may possess perennial interest if it be really artistic. In short, each beginner should school himself to make every exposure count toward that happy day when he has found himself photographically.

Opportunity is short-lived unless we make the most of it. However, this does not signify that the beginner should use his camera like a machine-gun and literally "spray" his friends and the landscape with hasty, worthless snapshots. Opportunity, in this case, refers not to limitless pictorial material, but to hundreds of subjects—good, bad and indifferent—out of which the beginner must select his best subjects. Herein lies his opportunity to make good.

No matter where the beginner may spend his vacation-days, there will be certain local points of interest which he will wish to photograph. There will be usually *one* viewpoint from which each subject may be photographed to the best advantage—technically and artistically. It is "up to" the beginner to find it. This is another opportunity for him to utilize. Instead of making a hurried exposure, he should take the very few extra moments required to make a *good picture* that will be of permanent value.

These suggestions apply alike to the beginner who uses the humble, although effective, Brownie, and to the proud possessor of a *de luxe* camera. In each case, the equipment is but the tool of the beginner.

With it, he must work out his own photographic problem. No matter what the price of the camera may be, price alone does not and never will control the ultimate results artistically. The individuality, breadth of view and mental preparation of a beginner can alone make a masterpiece. The ability to give the atomic weights of the ingredients used in the developer will not enable any beginner to make an artistic picture. Technical training is very important and highly desirable; but of itself it can produce nothing that makes an appeal to the heart and mind. The beginner must love the beauty he portrays before he can make the beholder love it. If a subject is cold and lifeless to him, the resulting picture will be so to others. It would seem that these statements were self-evident; but how many beginners stop to think of them?

Although I have often called attention to the importance to take photography seriously, I am going to mention it again. Not that I would have the beginner lose his enthusiasm, but rather that he should get more out of his photographic pursuit. To play a good game of tennis, a player *must* do certain things well. There is no quibbling about it. If he cannot make a well-directed return across the net, or he is unable to place the ball in any part of the court at will, he is not a popular partner in a tennis-match. He is compelled to take the matter seriously enough to be able to accomplish *results*. Unless the beginner in photography takes his pastime seriously enough to be able to make good pictures, he is no credit to himself or to photography. No matter how many blunders he may make, they will be overlooked if he is making a sincere effort to succeed. However, if he is merely "dabbling" in photography because "it is being done" in his particular social set, he is doomed to disillusionment photographically and otherwise. Let the beginner remember that whatever of energy, skill and thought he puts into the mastery of technical and artistic photography, he will receive far more in return than he thought possible.

A. H. B.

THE ARCH IN WINTER — G. A. SMITH

SECOND PRIZE—BEGINNERS' COMPETITION

Care of Photographic Shutters

THE importance of the proper care of photographic shutters is well brought out in a recent issue of *Kodakery*. Oil is an engine's best friend, but a photographic shutter's worst enemy.

Every photographic shutter has bearings, just as an engine, a machine or a watch has, but the bearings in a shutter work occasionally—usually for only a fraction of a second at a time, while the bearings in engines and machinery work continuously—often for hours at a time, and those in a watch work without stopping, for many months. Bearings that are constantly in action must, of necessity, be lubricated.

Photographic shutters are designed to work without lubrication; and oil, instead of helping will, invariably, handicap them.

A high-grade watch has jeweled bearings while a shutter has not. A watch is carried in the pocket or worn on the wrist, where its temperature is kept fairly constant. If it was left in a very cold room for a few days, or exposed to sudden and severe changes of temperature, it would not keep time, for the oil in its bearings would thicken and make it run slow.

A photographic shutter is freely exposed to the temperature of the air, and it is taken from warm rooms out into low temperatures in winter, as well as into very high temperatures in summer. It is exposed to sudden and severe temperature changes and it is so constructed that changes in temperature will scarcely affect it. If it needed oil it would work much slower in cold than in warm weather and the photographer would never know at what speed-marking to set the indicator to obtain the right exposure.

It is probable that more shutters are put out of order by oil than by accidents and all other causes combined, and, after a shutter has been oiled it always needs the attention of the maker.

The best care that can be bestowed on a photographic shutter is to keep it clean outside and to let the inside alone. When this is done it will usually render good service for many years.

Important Notice to Competitors

THE EDITOR has a number of pictures, that were entered in the beginners' competition, on which no action can be taken because the senders failed to observe all the rules, including the first rule. Unless the contributor sends with each entry a signed declaration that all the technical work from the exposure of the picture to the finished print is entirely his own, the entry will be ignored. It is not for the Editor to take the time and trouble to point out any omission of the rules by the entrant. Until such a declaration has been received by the Editor, all entries will remain without any attention.

To the Point

STUDIO-PROPRIETOR, to cleaning-woman, "Now, go into the next room and clean the shelves, but look out and don't break one of those glass-negatives!"

Ten minutes later, as he was busy making a sitting, he heard an awful crash of broken glass. He rushed to the next room and demanded, "What on earth are you doing!" "Nothing, sir," came the prompt but doleful reply; "it's done."

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTO-TECHNICAL FACTS

Edited by A. H. BEARDSLEY

Combines X-Ray and Motion-Picture

A COMBINATION X-ray and motion-picture apparatus, it is announced from Paris, is the invention of Drs. Lorman and Comandon. With the combined apparatus, pictures of animals can be thrown on the screen and the movements of the various organs shown. It is expected that, with modifications, the apparatus can be used with human beings as the objects photographed.

Two Fixing-Baths

A VERY large number of photographers still work with only one fixing-bath, and I wish to point out to them in this note what a great advantage is to be obtained by the use of two baths for each batch of plates or prints. The great advantage is that it gives a guarantee of complete fixation; but this is not all: it gives cleaner results and, strange though it may sound, it saves chemicals. My own method is, in the case of prints, to give twelve minutes in the first bath and six in the second; after each batch of prints the first bath is discarded, and the original second bath becomes the first. In the case of plates I leave them in the first bath until all the "whiteness" has gone, and the same time, plus five minutes, in the second. When the time in the first bath exceeds ten minutes this is discarded, and the second takes its place. The fixing under these conditions is really complete, and therefore the washing may be cut down, because it is a proved fact that a well-fixed negative needs less washing than a partly-fixed one.—A. G. W., in *The British Journal*.

The Same Stop Requires the Same Exposure with all Types of Lenses

WHEN we speak of the so-called "speed" of a lens, says a writer in *Kodakery*, we refer to the F/-value of its largest stop. The F/-value is the relation that exists between the diameter of its effective aperture and its focal length. If, for instance, this diameter is 1 inch and the focal length is 8 inches the F/-value is $1 \div 8$. This is called F/8.

The "speed" at which a lens works is determined by the amount of light that it transmits to the film, and although this depends on several factors, some of the light being absorbed and some reflected by the lens, yet for all practical purposes we may regard it as being determined by the F/-value of the stop used. The larger the stop the more light the lens will pass and the shorter the exposure that needs to be given.

The largest stop on a meniscus, which is a single lens, is smaller than the largest stop on a rectilinear, which is a double lens. The largest stop on a rectilinear is F/8 (U. S. 4).

An F/7.7 anastigmat is nearly 8% faster than a rectilinear, an F/6.3 anastigmat is about 62% faster and an F/4.5 anastigmat is about three times as fast as a rectilinear, but, it must be remembered that when any anastigmat is stopped down to, say, F/8 it works at F/8 speed and it is then necessary to give the same exposure with the anastigmat as is needed with any other kind of lens that is used with stop F/8.

The rule is, to give the same exposure with all kinds of lenses when the stop used on each has the same F/-value. When it is desired to give shorter exposure with an anastigmat than with other lenses the anastigmat must be used with a larger stop than the other lenses.

Some Practical Hints

TO OBTAIN SOFTER IMAGE ON GASLIGHT AND BROMIDE PAPERS

1st. Use more Metol and less Hydroquinone, than regular formula.

2d. Use developer at a colder temperature. Lower temperature causes somewhat the same effect as No. 1, as the temperature of developer has more effect on Hydroquinone than upon Metol.

3d. Use minimum amount of potassium bromide, just enough to keep the print clear.

4th. Short exposure and strong developer.

5th. Addition of ½ grain potassium iodide to each ounce of developer. This works differently on some papers than on others.

6th. Develop without any alkali.

TO INCREASE CONTRAST OF IMAGE ON GASLIGHT AND BROMIDE PAPERS.

1st. Use more Hydroquinone and same amount of Metol, or less Metol, than regular formula.

2d. Increase exposure and dilute developer.

3d. Use greatest amount potassium bromide possible without change of color in print.

4th. Substitute potassium carbonate for soda.

G. MYRON ALLEN.

Unequal Illumination

THE causes of unequal illumination with rapid lenses when short exposures are made is well brought out editorially in *The British Journal*.

Users of very rapid lenses are frequently at a loss to understand why, when very short exposures are made, the center of the plate is fairly well exposed, and the corners are thin and lacking in printing-value. This is due to two causes. One is a cutting off of light by the mounting of the lens, which is particularly likely to occur with lenses having long tubes. The other is the fact that the corners are more distant from the lens than is the center, and consequently receive less light. The first cause may be removed by decreasing the diaphragm until it appears as a perfect circle; but the second is incurable by ordinary means. In his "Simple Guide," Mr. Dallmeyer pointed out that when the lens subtends an angle of sixty degrees on the diagonal of the plate, a common thing with small hand-cameras, the corners only receive half the illumination, which reaches the center, and at ninety degrees in the case of fairly wide-angle lenses only one-fourth. If full exposures are given the defect is minimized; with snapshots it is most evident. Several optical and mechanical devices have been introduced as cures, but have not been found applicable in everyday work.

OUR CONTRIBUTING CRITICS

YOUR CRITICISM IS INVITED

Whoever sends the best criticism (not over 150 words) before the twentieth of the current month, will receive from us a three-month subscription to PHOTO-ERA MAGAZINE.

The winning criticism, in our opinion, is the first one printed below.

THE eyes of five innocent young puppies should not present an appearance of sin-filled blackness; in life they are usually alight with mischief, and should be so rendered by the photographer. There is evidence of underexposure in the print in question, and this is aggravated by the turning of the puppies' heads so far to the right that the very slanting rays of the sun do not reach the eyes at all.

The photograph is an achievement with regard to the successful rendering of five little bundles of animation, and must have entailed a tremendous amount of patient labor; only the camerist who has endeavored to group two or three animals can appreciate what must have been necessary to obtain this little family group of five.

The print, *per se*, would be improved by trimming either the top or the bottom about one-half inch, there being an unfortunate stiffness about its present composition. Longer exposure, more careful lighting of the eyes—always the most expressive things in any animal's face—and a slightly freer balance in the print seem to me to be the required improvements.

GORDON BALCH NEVIN.

I SHOULD like to offer my criticism on the picture I would call "Black & White." I cannot, however, make it technical, as photography is a still-very-young interest with me. The arrangement of the doggies is splendid; I cannot conceive a better one. The objection may be raised that it would have been better to include the object of their common interest; but it is wiser to leave that to the imagination. The comparative absence of foreground and background is detrimental to the picture, as a whole, since it almost leaves the quintet all "up in the air." The shadow of the ear on the first doggie from the left, as well as the shadow between its two forelegs, and the faint image of one of its hind-legs, would improve the picture only by being removed; and the gaze of the doggie next to it, should not have been allowed to wander.

Y. BILLY RUBIN.

THIS photograph shows evidences of a "soot-and-whitewash" effect which was probably more pro-

THE PICTURE CRITICIZED THIS MONTH

nounced in the original than in the reproduction. The close-up subject with strong contrasts calls for full exposure. With stop F/16 on a medium plate I would give a full ½ second—certainly not less than 1/5 second, even at the risk of movement. For an exposure of 1/25 second, use a fast plate and stop F/8 or larger.

The vignette is rather abrupt and is marred by the dark folds in the background. These, together with the slightly distracting pattern of the rug, could be removed by a little pencil-work on the negative. I have seen some wonderful pictures of puppies where the vignette faded into darkness instead of white paper—sepias on cream-stock.

The attention of the subjects is too carefully held by the assistant: a "sprawly" effect is "cuter;" but it requires endless patience. Edna is some imp, I'll say.

WINN W. DAVIDSON.

MIGHTY clever! If you don't think so, try to get *five* pups, or even two, with concentrated interest and in a pleasing arrangement such as the maker of this print has done. Notice particularly the arrangement of the two black pups between the three white ones. It takes patience to produce a print of this kind.

The print, however, suffers from underexposure. The coats of the black dogs are devoid of detail and those of the white ones have no gradations at all. The eyes of all five pups are solid black. With the harsh lighting, full exposure should have been given to overcome this; there was no need to stop the lens down to such an extent as was done in this case. The vignetting is not particularly well done.

C. B. WEED.

THE general arrangement is poor, owing, in part, to the monotony of the postures of the dogs. The posing is also awkward. The exposure was much too short, which renders the black pups very much jumbled in appearance. The focusing, too, could have been done more carefully. By the way, has the white pup on the left three legs in front instead of two?

Five pups at this age are peculiarly susceptible of interesting arrangement, and the present examples are no exception to this rule. They could have been shown rolling around or playing with each other, as they do, and a real picture might have resulted.

LYNDSEY BOURKE.

THE first point to which attention may be called, is the grouping. This is obviously arranged, with alternate light and dark; and, although such arrangement might be commended in treating certain subjects, in this case it emphasizes the artificiality and lack of spontaneity, which should be a feature of a subject such as this. These puppies had no hand in the arrangement, and could hardly have been less successful if allowed to compose themselves, for almost any natural grouping would have been preferable. The background is not the most suitable for a vignette. Technically the print shows signs of underexposure, which reference to the data confirms.

THOMAS FARMER.

SUBJECT—good but difficult. Exposure—one-fourth of correct exposure. Development—probably, too much. Vignetting—should be prohibited by law.

E. R. MORTON.

OUR ILLUSTRATIONS

WILFRED A. FRENCH

THE subject of the April cover—a magnificent landscape by David J. Sheahan—was so well received, that we are glad to adopt the suggestion of several interested subscribers to publish another picture by another P. P. of A., to serve as the initial decorative illustration for the current issue. The subject is St. John's Cathedral, situated on Columbia Heights, New York. The edifice, only partly finished, rises majestically in the midst of a richly decorative setting, and is greeted by the morning-sun. The artist, James C. Coppola, of New York, is a member of the Pictorial Photographers of America, to which group of workers he does credit by reason of his eminent artistic talent. Data: July, 9 A.M.; bright sunlight; 5 x 7 Seneca camera; 8½-inch Wollensak Velostigmat Series II; stop, F/4.5; 1/25 second; Standard Orthonon; pyro; Bromoil print.

"Lake-Birches," by Amos A. Falls, forms a worthy frontispiece. It is one of the most successful and pleasing foreground-studies that I have seen and will merit justly all the praise that it doubtless will receive. The material has been utilized with rare artistic judgment; the lighting is superb, and the lake, as well as the distant shore, has been adjusted harmoniously, in definition and tonal value, to the main point of interest —the clump of birches. Data: August, 3 P.M.; hazy sunlight; 8¼-inch Goerz Dagor lens, fitted to 4 x 5 Cycle Graphic; stop, F/8; B. & J. 3-time color-screen; 1/5 second; 4 x 5 Cramer Iso Double-Coated; pyro-soda, tank; Buff Cyko enlargement.

Although Mr. Harrison has mentioned the *modus operandi* of most of the pictures that illustrate his paper on telephotography, he has provided special information regarding the subjects as follows:—

"Over the City," page 223; late evening in October; 3A Graflex; 7-inch Wollensak Velostigmat Series II; stop, F/11; 1/25 second.

"The Cathedral," page 224; 35-inch telephoto; stop F/8; 15 seconds; 3-time color-screen; Velox print.

"The House of the Sunken Gardens," page 227; 3A Graflex; 7-inch Wollensak Velostigmat Series II; stop, F/8; 1/50 second.

"A Charming Entrance," page 228; 15¾-inch Cooke-Telar; stop, F/13; 1/25 second.

"Spring," page 230, is by E. M. Pratt, specimens of whose admirable work have appeared in PHOTO-ERA during the past few years. Mr. Pratt as well as David J. Sheahan, James C. Coppola and many others, is entitled to use the initials, P. P. A., after his name. Yes; this is a hint to President White of the P. P. of A.

The picture portrays a spring day in California and, as a pictorial composition, exemplifies Mr. Pratt's well-known artistry. Data: May, 8 A.M.; 10½-inch Struss Pictorial Lens; K-2 color-screen; 1/16 second; Standard Orthonon; Adurol in tank; Artura Carbon Black, Grade E; M. Q. developer.

The author of "Mother Brook," page 233, offers no apology for the sharply defined photograph of a worthy pictorial theme. In those early days of amateur photography, in 1880, it was an unpardonable offense to produce a picture other than absolutely sharp from edge to edge, and from the immediate foreground to the most remote object in the horizon. To accomplish this praiseworthy result, a small diaphragm—generally F/22 or F/32—was employed, and this, together with dryplates of low sensitiveness, necessitated a relatively long exposure—from about 6 to 12 seconds, according to the strength of the light. The anastigmat, with its perfect definition at a large aperture, had not yet arrived; consequently, lenses (objectives) of the rectilinear type, or of the single achromatic form, were used. Some of the former were the Ross Rapid Symmetrical, Darlot Rapid Hemispherical and Voigtländer Euryscope.

It was the intention of the writer to photograph this scene, from the same view-point, last autumn (late October) and with the same lens, which is still preserved, but with a stop much larger than the one that was used in 1880, which was F/22, and to produce a slightly diffused result; but the opportunity to do so did not present itself. Were the view to be photographed again, and if the same objects existed as they did forty years ago, it is probable that the tree at the right would be omitted. Also, a few clouds would be desirable, to relieve the monotony of the sky. The picture reproduced in this issue was considered meritorious, artistically and technically, by the members of the local camera club of that period. To-day, a straight print from the original (6½ x 8½) negative would be treated with scorn by everyone but a purely commercial photographer. Its appearance, to-day, may be justified on the ground that it may serve as suitable accompaniment to the episode related by the author on pages 232 and 233.

Those who must have read with unmistakable pleasure and satisfaction the beautifully illustrated nature-stories by Frederick B. Hodges, that appeared in PHOTO-ERA during 1913, 1914, 1918 and 1919, will undoubtedly view Mr. Hodges' superb picture, "The Curving Wood-Road," page 234, with a feeling of delight. How can they help it? The composition is above reproach, the performance masterful, and the sentiment fully in accord with the beautiful verses on the opposite page. Data: July, 2 P.M.; good light; 8 x 10 Century Camera; 11 7/8-inch Tessar, F/6.3; used at full opening; 1/25 second; Eastman Portrait Film; pyro; print on Azo, Grade A, clouds printed in.

The views that illustrate the pilgrimage of two camerists to Provincetown, pages 236 to 248, have their data in the narrative itself.

Advanced Workers' Competition

ROSS W. BAKER, the winner of the second prize in the Still-Life Competition, appears to have a sense of humor, as the innocent-looking beverage in his tastefully arranged picture, page 251, indicates. "Tasting is believing," as the anti-dry would say. Nevertheless, there is not the slightest doubt that the stimulant so daintily served on this immaculate table, and in so well-ordered and delightful a home as Mr. Baker's must be, is conducive to spiritual thoughts. Whether or not the sugar is crowding the teapot, or the "still" life group needs space and air, at the top, is a debatable question. A pity that the beauty of tone and texture of the original print is not indicated in the reproduction. Data: January, 9 P.M.; Welsbach light; 3 minutes; 5 x 7 view-camera; 12-inch Wollen-

sak Verito; stop, F/6; W. & W. Panchromatic; pyro, tank; contact Azo E. Hard print.

"Fruit," page 252, is a hackneyed theme, but unusually well-done. The composition is in pyramidal form; the lines are irregular, but graceful, and the distribution of light shows exceptionally good judgment. Data: Sept., 3 P.M.; dull light; 8-inch R. R. lens; stop, F/16; 5-time color-screen; exposure, 3 minutes; Cramer Inst. Iso; Elon dev.; enlarged on Azo A. Hard.

Though technically a still-life composition, "Final Instructions" is teeming with simulated animation. Responsive intelligence seems to emanate from those artificial eyes. The theme is strikingly original and is highly creditable to the imaginative skill of its author. Data: October, 1919; 2 P.M.; light from bright sun; 5 x 7 Seneca; R. R. lens; at F/16; 3-time color-screen; 2 seconds; Standard Orthonon; pyro; enlarged on Artura Carbon Black E.

"The Last Quarter," by H. B. Rudolph, page 254, was published originally in December, 1917. It is used here as a good example of high-speed work. I referred to the picture, at the time, as follows:

"With usual love of the pictorial, H. B. Rudolph has given us a living example of a summer-sport, with appropriate concomitants of the vacation-season. The artist, a consistent prize-winner, has exercised excellent judgment in forming his group of speeding horses; even the last in the procession inclines obligingly towards the center of the picture. The proportions are admirable, and, while the four racers are foremost in the matter of interest, one cannot ignore the faint, curving line of spectators and the effective setting of the park and sky. Data: July, 1917, 3 P.M.; hazy light; 5 x 7 Century; 7-inch Euryplan anastigmat; F/4.8; 1/1000 second (Multi-Speed shutter); Seed 30 plate; hydrometol, in tray; enlarged part of negative on P. M. C. Bromide No. 2; Kathol-hydro for development; clouds printed in from separate negative."

Beginners' Competition

THE winner of the leading picture in the junior class has certainly acquitted himself nobly. The theme is well conceived and but for a little crowding of the two figures and the unfortunate appearance of the background—which careful focusing would have obviated—the picture would have proved worthy the skill and reputation of a P. P. of A.! Data: May, 3 P.M.; cloudy; 4 x 5 Graflex; 7-inch Goerz Dagor; stop, F/8; 1/25 second; film-pack; Eastman pyro; Azo F. Medium.

"The Arch in Winter," by G. A. Smith, gave the first-prize winner "a run for his money"—in the language of modern slang. Successful figure-studies are generally deemed more difficult to achieve, and that is why the jury favored Mr. Nunome. But Mr. Smith has produced a remarkably interesting picture—one in which the arch has been given a truly beautiful setting. Mr. Smith is to be congratulated. He is unmistakably on the right road to pictorial success. He has my best wishes. Data: January, about 3 P.M.; good sunlight; 4 x 5 Graflex; 7½-inch B. & L. F/4.5; at F/8; 1/25 second; 4 x 5 Premo Film-Pack; Eastman Special Developer; contact-print on Azo Soft, Grade F.

Our Contributing Critics

OUR readers who "know a good picture when they see one," or how a poor one could have been improved, will have an opportunity to accord constructive criticism to "Milking," by Miss E. Kneller. This lady, eager to improve her photographic ways, has trustingly placed her interesting rural composition at the chivalrous disposal of her fellow-readers. Data: September 10, 1919; clear sky, sunshine; 6.15 A.M.; 1/10 second; Premo Film Pack 3¼ x 5½; Eastman Tank Developer; bromide enlargement.

The Choice of a Printing-Paper

EVERY practical photographer knows that it is easier to produce the best results if a paper is selected which is made specially for the work in hand, or the type of negative to be printed from. According to an English cotemporary, that is the reason why the sensitized paper-manufacturer is compelled to make such a large variety of papers.

The press-photographer uses a Glossy Contrasty Bromide paper which is specially made for his work. The high-class portrait photographer likes to use a soft grade of Mat-Bromide or similar paper. The dealer or chemist will use gaslight or Rajo paper for amateurs' "finishing," on account of the great contrast it gives from the frequently under-exposed films, yet he may have perforce to use Bromide paper for some of the more exposed or harsher negatives.

The demand for printing-papers of special characteristics is surprising, and we make quite a feature of the production of these papers. For instance the X-Ray or Aerial Photographer demands a special paper that will give good contrasts and render fine detail on a highly glossy surface, the Drawing Office of the large Engineering Firms is supplied with a Mat-paper of great speed for copying drawings in the camera, while the scientific worker, or the poster and label designer, will use a panchromatic paper relatively sensitive to all colors.

In the summer-season the printing-out paper and self-toning papers are still in great demand among amateurs, and there is no gainsaying the fact that the results produced on these papers are very fine, even from quite a variety of grades of negatives.

The surface of a printing-paper plays an important part in the best rendering of a negative. A very harsh negative will often yield a better-looking print on a Mat-paper than on a glossy surface, while thin delicate negatives may give the best results on a glossy surface. Enlargements of three diameters and upwards are best made on the rough-surface Bromide paper. The Satin surface is mostly used for direct work where little or no "finishing" is required, and both the Mat and rough surfaces lend themselves to working up.

There is much scope for individuality in the use of the Cream papers of different surfaces especially when the prints or enlargements are toned.

But always follow the makers' instructions. The best developer is always the one he recommends.

The Value of Just Criticism

THE following paragraph is taken from an address delivered by President C. Atkin Swan, Esquire, president of the Royal Photographic Society, London, England.

"Criticism, of course, is excellent. I have been criticised here. Somebody told me my slides were not worth looking at, that I had better never have made them; better still, never have made the original negatives. The criticism did me good. I looked at them again, and saw that they were not satisfactory, and made a present of them to a Sunday-school teacher, who has never been near me since! We must have criticism, but it is equally necessary that the criticism should be properly founded."

ON THE GROUNDGLASS

WILFRED A. FRENCH

Photographic Ignorance in Congress

ALTHOUGH members of both houses of Congress—when these bodies are in session—are absorbed with the disposition of many perplexing questions, it does not follow that they possess no knowledge of photography. Far from it. Several members of the Senate and of the House, and their secretaries as well, are readers of PHOTO-ERA, consequently, when a representative of the people happens to reveal a lack of familiarity with one of the simplest rudiments of camera-activity, the circumstance is recognized at once, and the result causes general amusement. For the incident, related below, I am indebted to the secretary of a prominent Representative who is also a subscriber to this publication.

The lower branch was discussing, recently, the question of treating sick and wounded ex-service men in a certain army-hospital that lacked adequate lighting-facilities—a condition that was made clear by means of photographs made by a professional expert. The part of the discussion that contains the humorous element is quoted directly from the *Congressional Record.*

"Mr. JOHNSON (of South Dakota): In picture No. 3 is Frank Hoppé, of 1003 North Lincoln St., Chicago. This picture shows four beds in another dark hallway in the Marine Hospital in Chicago. Every patient, every doctor, every nurse that walks back and forth from one part of this hospital to the other must pass directly by the four beds. The other three men are able to walk around and get a little fresh air, but although I was there in the middle of the day, I know that the only light that Frank Hoppé receives he gets from the electric light which is directly over his head. And if that is any way to take care of a patient in any hospital in the world I do not know it.

"Mr. BLANTON: In regard to this picture of the dark hallway, it does not show that it was taken by any flashlight, so it seems that the dark hallway was light enough to have the photograph taken.

"Mr. JOHNSON: The gentleman is mistaken; it was made by a flashlight. I was standing there when the picture was made. (Laughter.)

"Mr. BLANTON: *It does not show in the picture.*

"Mr. JOHNSON: I will tell the gentleman and that will settle it.

"Mr. CHINDBLOM (of Chicago): Does the gentleman from Texas expect that the picture would show the flashlight itself?

"Mr. BLANTON: *Usually they do.* (Laughter.)"

Mr. Thomas Lindsay Blanton is a Democrat, a lawyer, 47 years old, and comes from Abilene, Texas. He is a member of the House-Committee on Education (*Education,* mind you!) and Woman Suffrage. He is the same gentleman that Sam Gompers took a rise out of recently by declaring that he wouldn't know the truth if he saw it, and wouldn't speak it if he did—but Gompers is pretty quick on the trigger these days, as you have probably noticed.

All of this leads to the conclusion that when we have men so colossally ignorant on so well-known a subject as flashlight-photography—with the rudiments of which one would suppose everyone was acquainted—in our National Congress, so often called with unconscious humor "the greatest deliberative body in the world," it is hardly to be wondered at that, in the hasty organization of an immense expeditionary force, incompetence resulted in high places, as well as low.

A Terpsichorean Lens

PROFESSOR LIGHTFOOT conducted a high-class dancing-school as a vocation; but was also an ardent amateur photographer when the opportunity offered. He was interested especially in pictorial photography and a strong advocate of the soft-focus lens. There was hardly a lens of this type that he did not possess or had not used. His hobby was divided between a study of the pictorial and an insatiable desire to own the very latest soft-focus lens that might appear on the market—no matter how often a new one made its appearance.

Recently, he learned, through a friend, of a new type of soft-focus lens. Being a little hard of hearing, he failed to catch the exact name of the lens, and on the morning that he found time to call at his dealer's he approached the salesman in rather a hazy frame of mind.

"Good morning, Prof. Lightfoot, what can I do for you this morning?" the salesman said, pleasantly. "That is exactly what I am trying to decide myself," replied the professor with a smile. "You see, I have just left a dancing-class and I am trying to recall what I came in to see you about. Oh, I have it! You know that last soft-focus lens I bought of you has given me nothing but frightfully jazzed backgrounds." "Jazzed backgrounds!" exclaimed the salesman in astonishment. "What do you mean?"

"Oh, excuse me. Of course you don't understand," replied the somewhat perturbed professor. "For the life of me, I can't forget my dancing. What I mean is a background filled with large circles of confusion or large round spots and generally 'busy' with conspicuous patches of light and shade."

"I see what you mean now," laughed the salesman. "Well, what I want," continued the professor, "is a soft-focus lens that will eliminate such a background and reduce the halation around objects that are light—such as a man's white collar. A friend told me about a new syncopated lens."

"Syncopated lens?" queried the salesman, amused and bewildered. "Yes, isn't that what you call it?" asked the professor, unconscious of his use of the modern terpsichorean term. Suddenly the salesman's bewilderment gave way to ill-concealed mirth. "You mean the new Synthetic lens, don't you?"

"So I do, so I do," admitted the dancing-master, and both joined in a hearty laugh.

The Way of a Maid with a Man

FOR the encouragement of young men in love let us say that a great many girls say "No," at first; but, like the photographers, they know how to retouch their negatives.

ANSWERS TO QUERIES

C. A. O.—**The stains on the paper appear to be due to incomplete fixation,** although you seem to have taken the usual precautions. Perhaps you put your finger on the cause accidentally when you speak of the combined action of air and hypo. Prints should be fully and carefully immersed in the hypo when first put in. They should not be taken out for at least five or ten minutes. If you use hypo-solution of 6 ozs. to the pint and temperature over 60 degrees F. you should not have this fixing-stain. If this is done, we know of no paper which will not yield satisfactory prints in this respect.

R. E. H.—**That formaline added even in small quantities to pyro-soda** will not affect the action of the developer, is a statement we would not care to make. However, we think that it will, owing to the readiness with which formaline forms compounds with hydroxy substances, but very little is known of its action in this respect. A better course is the use of a formaline-bath before development.

C. O.—**Printing on an egg-shell is possible** if the shell be sensitized and the picture projected upon it by means of an enlarging outfit or similar equipment well stopped down. However, it is probable that the picture you saw was not printed directly on the surface of the shell but was applied by one of the transfer-processes. It might be possible to transfer a carbon-print to an egg-shell and we should think that there would be little difficulty to transfer a print made on Kodak Transferotype bromide paper.

S. E.—**A negative may be turned into a positive** by developing the negative fully. Then, instead of placing it in hypo, immerse it in a solution of ammonium persulphate of about five per cent strength. The developed negative image is dissolved out by this solution, leaving an undeveloped positive image. This positive image can be darkened by immersing the plate in any ordinary non-staining developer in daylight. The plate should then be washed and dried. The process is interesting; but unless plates or papers could be obtained specially coated to adapt themselves to it, it is hardly usable in practice. We may say that a parallel method is invariably used in autochrome work to convert the negative autochrome, which is obtained on developing, into the positive autochrome which constitutes the finished result.

M. K. J.—**The advantage of a double-extension camera** is that you can focus objects much nearer the camera and therefore can get them on a larger scale than with a single extension. This would certainly be useful in copying and possibly at times in portraiture. With landscape, it would only be advantageous should you wish to use a lens of longer focus; but probably if you became sufficiently interested in landscape work to get a long-focus lens, you would be likely to get a view-camera.

C. K. W.—**The use of a single lens for architectural work** is not advisable because straight lines near the edge of the picture will be rendered usually with more or less curvature. However, many times this distortion may be unnoticed. The leaning-over effect is obtained with any lens, if the camera is tilted up or down. Unless the camera is equipped with a swing-back, it is impossible to avoid distortion.

S. A. H.—**A solution of which ten minims contained one grain** is not an exact ten per cent solution; but it may be made easily. Dissolve the pyro and the preservative in a less quantity of water than a ten per cent solution would require—five ounces of water to one ounce of pyro can be used easily—and then dilute with water until the total bulk of the solution contains ten times as many minims as there are grains of pyro added. The actual quantity of potassium metabisulphite does not matter very much.

B. C. G.—**To make fire-light photographs** the method adopted is to use the light in a very low position. For example, if you have French windows coming right down to the floor, you could cover up all except the lowest foot of the window and place some white paper on the floor just inside of the window to serve as a reflector; arrange the fender and fire-irons in front of this and you will illuminate a sitter as if by firelight. For artificial light, you could use magnesium-ribbon or a flashlamp in the actual fireplace. To obtain the firelight effect in the finished print, some workers use a red-coating solution and some a red stain.

Home-Portraiture by Amateurs and Professionals has been treated in the most capable manner in PHOTO-ERA since its publication. Among its most useful and best-written articles, by expert specialists, are those by Katherine B. Stanley, fully illustrated, in April, 1911; by Felix Raymer, illustrated in September, 1911; by Katherine Bingham, illustrated in January, 1913; "Photographing the Baby," by Albert B. Niess, in April, 1915; by Norman Butler, illustrated, December, 1916; by Katherine Bingham, in March, 1917; Illustrated Competition, in 1917, and by H. B. Rudolph, illustrated, October, 1918.

A. G. S.—**For finishing prints with a glossy surface, a paper prepared with a naturally glossy surface should be employed.** The most simple and satisfactory method to work is as follows: The prints, after fixing and washing, should be immersed in a formaline-bath—formaline ½ ounce, water 5 ounces—for two or three minutes, washed for a quarter of an hour, and then dried. A glass, celluloid, or ferrotype plate is washed and polished with a soft fabric, first rubbing on with a flannel a solution of 20 grains of beeswax in 1 ounce of turpentine. The print is soaked in water until thoroughly limp, and then a liberal quantity of water is thrown on the polished plate, and the print placed face downwards on the plate, care being taken that there is plenty of water between the two surfaces. The print is next firmly squeegeed into contact, interposing a sheet of rubber cloth between the print and the roller squeegee. When quite dry, the print will leave the plate very easily, and its surface will possess a high gloss. This surface is hard and durable, due to the employment of the formaline-bath, but it is well to back the print with a waterproof sheet so as to prevent the mountant from affecting the glaze. This method has proved to be efficient and eminently successful in actual practice. There are several methods that are of interest to amateur and professional photographers.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Review of Pittsburgh Salon

ALTHOUGH we made every possible effort to include the review of the Seventh Annual Pittsburgh Salon of Photography in this issue, unavoidable delays beyond our control have caused the postponement of this feature until the June number. This review will be illustrated by a selected number of masterpieces.

Safe and Profitable Investments

PHOTO-ERA readers will notice in this issue an innovation in the magazine's advertising-policy, viz., an advertisement of a dealer in high-grade investment-securities.

With the exception of the advertisement of a well-known local bank of deposit, the Publisher has excluded, heretofore, advertisements of a financial character, particularly the sale of certain stocks and bonds, because of the responsibility involved, and the difficulty to obtain positively reliable information.

But in view of a general desire to invest money advantageously and safely, or to speculate conservatively but profitably, or to exchange good securities for better ones, the Publisher of PHOTO-ERA personally solicited the advertisement of an absolutely honorable, trustworthy and conscientious firm—one whose dealings he can endorse with confidence based upon personal and highly satisfactory results. The advertisement will be found elsewhere in this issue.

Success of America's Pictorial Annual

THE first effort to issue a collection of pictures illustrating the work of American photo-pictorialists, has met general success. The book was favorably endorsed in April PHOTO-ERA MAGAZINE, whose Publisher has still a few copies left. Price, $3.50 each, sent postpaid to any part of the United States, Canada and Mexico.

An Appreciative Letter

MARCH 27, 1920.

PHOTO-ERA MAGAZINE, Boston, Mass.

I am going to take the plunge. After several years of more or less photographic success amateurishly (?), I am going to choose to enter that business as a profession. PHOTO-ERA MAGAZINE has been one of the most powerful—in fact, *the* most powerful—agent I have known in teaching photography—*good* photography—to me. I believe that every one of your readers will join me in the sentiment that PHOTO-ERA has grown more, has advanced more, and has elevated itself more than any other photographic magazine in the United States.

I am very certain that in my future professional business, PHOTO-ERA will be at my finger-tips at all times, as a reference book of unequaled quality. I owe much to PHOTO-ERA for its invaluable mines of information.

FREDERICK C. DAVIS.

Editor Beardsley Takes a Vacation

THE mental and physical demands made upon the editors of PHOTO-ERA have increased steadily with the growing popularity of the magazine. For many months, the regular correspondence, criticism of pictures, answers to queries as well as the editorial and mechanical preparation of the magazine, have entailed a tremendous amount of hard work which has taxed the endurance of all concerned. As a result of these arduous duties, Mr. A. H. Beardsley, Assistant-Editor, is to enjoy a well-earned rest of three months in the mountains of New Hampshire.

Mr. Wentworth's Pictures

THE exhibition of photographs by Bertrand H. Wentworth, of Gardiner, Maine, which was held in the gallery of the Society of Arts and Crafts, Boston, U.S.A., during the last two weeks in March, proved to be a source of genuine delight. In the interpretation of atmospheric effects and perspective, they represent the last word. They afford pleasure even to the most exacting art-critics, for in purity and beauty of tones, these pictures of mist-laden shore and island rival the finest efforts of the master-painter. The impressive scenery of rocky Monhegan familiar to Mr. Wentworth by long visits and studious observation, has yielded up to this artist-photographer all its mystery and charm which, through his expressive medium of lens and paper he has translated into visions of beauty.

Mr. Wentworth's technical mastery is supreme; indeed, it seems as if his pictures were spontaneous creations. This is true of his shore-views, and of his winter-scenes—in the woods and in the open. A view of a patch of golden rod relieved against a subdued background of evergreens, of this collection, is one of many that will live long in the memory. It is also interesting to note that each of Mr. Wentworth's pictures bore an appropriate and felicitous title. The exhibit consisted of thirty-six enlarged prints and had been seen previously in Brooklyn, New York, Poughkeepsie, Newark, Philadelphia, Washington, Indianapolis, Cleveland, Detroit, Grand Rapids, and Chicago.

What has Happened to Photo-Era?

SINCE last summer, the office of PHOTO-ERA has received a constantly increasing number of letters from photo-dealers in this country, Canada, and elsewhere as follows:

"Please change my standing order for copies of PHOTO-ERA from 12 to 20 copies;" "My order should read from now on 30 copies of your fine magazine instead of 12 as heretofore;" "Please make our order read monthly—40 copies, and not 30 copies, beginning with the May issue;" "You will kindly increase our regular order to 26 copies per month" (this from a dealer in Canada); "Please continue to send us 30 copies a month. The February number was sold out in two days;" "We enclose cheque to pay for 42 copies of PHOTO-ERA a month for one year beginning with the

May number" (a Chicago dealer). And thus it goes. This entire page could be filled with communications like the above.

A Threefold Credit

RARELY has an issue of PHOTO-ERA created so favorable an impression as the one of April. Although the illustrated camera-tour through southern France, by Herbert B. Turner, was a winning feature, it was the delightfully artistic cover in grayish blue ink that attracted the attention of art-lovers, including professional artists who purchased copies wherever they were displayed. The entire allotment in Boston was sold out in a few days.

The credit, then, is due to Herbert B. Turner, David J. Sheahan, whose picture beautified the front-cover, and to Geo. H. Ellis Co., printers of PHOTO-ERA.

Claude L. Powers

IT is with regret that we record the death, on March 19, of Claude L. Powers, of Claremont, N. H., who was held in such high esteem by members of the Photographers' Association of New England. Mr. Powers was First Vice-President of that association several times and had always taken an active and influential part in the association-work. Moreover, he was one of the original organizers of the New England Association. He was the president for 1920 of the New Hampshire Photographers' Association. Death was due to valvular heart trouble. Mrs. Powers and one son survive him; we extend our sincere sympathy to them both.

Reversed Negatives

ALTHOUGH an article for beginners recently dealt with the phenomenon of a plate or film developing up as a positive instead of a negative, says *The Amateur Photographer*, we continue to get specimens of such results sent to us, with expressions of surprise at obtaining them, and with a request for an explanation. Reversal from excessive overexposure has long been known; but reversal in the case of underexposure seems to be a comparatively modern trouble. It is most often met when an underexposure is developed in a full-strength developer for a long time; and is apparently due to the unexhausted developer in the least exposed parts fogging the unexposed emulsion lying beneath the image. It may occur with a film developed in complete darkness in a tank; but is unquestionably helped when the developing negative is exposed to an unsafe light. The positive is too feeble and irregular to be of any service, so that the only advice that is of use is to take care always to expose correctly.

Dusting Plates

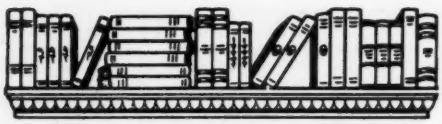
MOST of us probably have got over our desire to play childish games, remarks *The British Journal*, but let the reader unbend for a while and note a description of a very favorite pastime of many a boy or girl. Take a piece of glass about a foot long and make a bridge of it by supporting each end on a book, keeping the glass about an inch above the table. Under the glass put little paper figures cut out to represent men and animals. Now if you rub the glass vigorously with a silk-handkerchief these little figures will jump from the table and cling to the under side of the glass. The reader may ask what that has to do with photography. Only this, that the figures jump because the glass has become a form of electrified magnet by the friction, and that is just exactly what happens when a plate is "dusted" before exposure. We do not rub it so hard, and therefore it does not pick up big bits of paper; but it will pick up many little bits of dust that are always floating in the air. Platemakers always send out their plates almost free of dust, and the best plan is to see that it never gets to them. The best way to dislodge any that there may be is to give the edge of the plate a smart rap on the darkroom-bench.

Window-Portraiture

THE figure-at-the-window style of portraiture is one that has tempted photographers of all schools and periods, and particularly those specializing in home-portraiture, says *The British Journal*. Of course, the style is not an easy one owing to the fact that the lighting is not under the absolute control of the photographer, and also because it is one that tends to give strong contrasts. Much, however, may be done to improve matters by the use of suitable reflectors inside the room, and even by the aid of a magnesium-flash. The chief fault to guard against in window-portraiture is underexposure, which is especially liable to show itself owing to the subject generally having a long scale between highlights and deep shadows. For this reason also a well-backed orthochromatic plate is an essential. A backed plate of the non-screen type will reduce halation-troubles to a minimum, or a portrait-film may be used. Great care must also be taken not to overdevelop the negative. Most portraits at the window that we have seen have been made from inside the room; but there is no reason why this should always be the rule. There is no objection—given suitable surroundings—to the portrait being made from the outside. This may often prove a better point of view, and the technical difficulties of the subject certainly become less formidable on this account. Photographers who are on the lookout for something distinctive in the way of at-home portraiture may perhaps find a hint in this mention of the alternative viewpoint.

The Color of the Mount

WHEN only a narrow margin of cardboard was shown round a mounted photograph, the color and depth of tone did not greatly affect the appearance of the print, provided, of course, that vivid colors were not used. In these days, when the mount is usually much greater in area than the print, the color and depth need more careful consideration, as the common practice of using one tint of brown or gray for all prints often results in spoiling the effect of the work. There are few bromide printers who can guarantee good sepia tones from every class of negative, and much may be done to make a print look its best by using a suitable mounting-paper. Even with black and white prints the depth of tone of the mount must be studied, as a delicate pencil-like image may be made to appear washed out by placing upon a dark gray or brown, which would suit a rich print with strong contrasts. A few pieces of various colored mounting-papers, and a piece of colorless glass to keep the print flat, will enable the most suitable tint to be chosen with the minimum of trouble. A narrow tint mounted under the print sometimes helps to detach the print from the mount; but, as a general rule, such tints are not to be recommended, and they are consequently falling into disuse.—*The British Journal.*



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

PHOTOGRAMS OF THE YEAR 1919-20. The Annual Review of the World's Pictorial Photographic Work, Edited by F. J. Mortimer, F.R.P.S. 32 pages text, 84 halftone-reproductions. Price, paper-covers, $2.00. Postage according to zone. London; Iliffe & Sons, Ltd. New York: Tennant & Ward, 103 Park Ave., American Agents.

Again, we greet the arrival of the British international annual of pictorial photography. In variety the half-tone reproductions have not been excelled by any previous issue of this deservedly popular production. Its cosmopolitan character is obvious, the pictorial contributors being distributed as follows: United States 14, Australia 7, Canada 3, India 3, Holland 3, Spain 2, Japan 2, and Italy, Belgium, Sweden, Norway, Denmark, Egypt, New Zealand and China, one each (about one-half of the total number of 84); the rest are English. Although each subject has positive artistic merit, the following ones appeal to us more strongly than others: The British Lion (frontispiece), Reginald Johnson; The Enchanted Wood, C. J. Merfield; L'Attente, Leonard Misonne; En Arcadie (design for design), Francis Jay; On the Seashore, S. W. Eurrope; Bruges, Charles Job; Dancers, Hugh Cecil; Mexican Boy, Louis Fleckenstein; Pandora, Yvonne Park; Looking Down (seascape), W. J. Clutterbuck; Hills of California, John Paul Edwards; The Tower, Harry Storm; The Blue Crane, George Alexander; Gasometers, Ward Muir; Dancing-Study, Waldemar Eide; A Japanese Actor, C. P. Crowther; Firing Battery, Capt. Wilkins and C. W. Bostock; The March of the Silhouettes, C. W. Christiansen; A Study in Line and Tone, Bertram Park; Symphony, J. E. Paton; The Little Boat, Richard Polak; Prades, France, T. B. Blow; Phyllis and Crinoline, Charles Borup; The Deserted Mill, J. M. Whiteside; Windswept, S. Bridgen; North-Westerly Storm, W. Truelsen; Sun-Flecked Columns, E. M. Pratt; Ballerina, Arthur F. Kales; His Boy in France, Rudolf Eickemeyer; The End of the Trail, F. J. Mortimer; Coquette, Andrew Barclay; Orient, Gascoigne Lynde; The Stockman, C. E. Wakeford; On a Dutch Canal, A. G. W. Reusser; A Street in Old Cairo, J. H. Coatsworth; Epilogue, Edward Weston, and Pierrot Blanc, the Earl of Carnarvon.

The text is of unusual interest to the pictorial worker, in that Mr. Mortimer's five-page editorial, Harold Cazneaux's review of pictorial activities in Australia, W. H. Porterfield's similar effort for America, and H. B. Goodwin's for Scandinavia, as well as F. C. Tilney's illuminating Critical Causerie of eminent pictures of the year 1919, provide entertaining, instructive and dependable reading. There is also a complete list of British Photographic Societies and Postal Camera Clubs, together with days of meetings, membership fees and name and address of each secretary which constitutes a very valuable and much appreciated feature of this popular annual of photography.

Night-Effects in Daylight-Pictures

MANY interesting photographs of outdoor-scenes, in which the lighting-effects closely resemble those that we see on moonlight-nights, have been printed from negatives that were exposed when the sun was shining brightly.

A writer in *Kodakery* goes on to say that, negatives that will yield such prints can be made easily if the subject is a suitable one and the light-conditions are right.

We think of night as a period of darkness, and it is probably because of this fact that a picture will not adequately suggest night to us unless it contains more dark than light-tones.

The deep shadows in a night-scene are black, the halftones quite dark and the sky is never as brightly lighted as in the daytime. If a picture is to suggest night, it must render these tones as we see them at night; but it should also, for pictorial effect, contain some highlights. These highlights should be on the landscape instead of in the sky, and they can only be furnished by something that reflects light enough to photograph white or very light gray. Sunlight reflected from a sheet of open water, or from snow or ice, will furnish these highlights.

Sunlight is needed to give the necessary contrast between the lightest and the darkest parts of the picture, and since the strongest lights are not to be in the sky it will be necessary to use a filter for photographing the subject.

The reason why a filter must be used is because all photographic films and plates are more sensitive to blue and violet than to any other colors, and since more of the blue-violet is reflected from the sky than from the landscape it is necessary to use a filter to cut out the excess of these colors, if we wish to make a strongly-lighted sky photograph dark enough to obtain the effect needed to suggest a night-scene.

The point of view from which to make such pictures is one from which more of the dark than of the light side of the subject can be seen, and the best time to make them is at that hour of the day when the greater part of that side of the subject that is to be photographed happens to be in shadow. The noon hour is as suitable as any other, if the light-conditions are favorable at that time.

In making such pictures we must expose for the strongest lights only. This will underexpose the shadows, so that they will print black. If we expose long enough to record detail in the shadows the result will be a day and not a night-effect. Splendid results have been obtained with the K2 Filter when exposures of 1/25 of a second, and, with the Kodak Color Filter when exposures of 1/50 of a second were made, with stop 4 on rectilinear, or stop F/8 on anastigmat lenses.

With single lens cameras we would suggest an ordinary snapshot—with a Kodak Color Filter in front of the lens. If the pictures are made early in the morning or late in the afternoon, the exposures should be from two to four times as long as those stated.

Distant landscapes and all subjects that lack deep shadows are wholly unsuitable for the kind of work we have described. Typical night-effects can only be obtained in daylight-pictures of nearby subjects, in which plenty of dark tones can be seen.

Tact

"Do show me your print-portfolio, Mr. Snappum; I always enjoy looking at your photographs. You know, I don't know the first thing about pictures."

LONDON LETTER

CARINE AND WILL CADBY

JUST before leaving Switzerland, we noticed that the first new book on ski-ing, published since the war, made its appearance. This is called "Cross-Country Ski-ing," is written by Mr. Arnold Lunn and published by Methuen. Mr. Lunn, who is an expert in all ski-craft, is also a pioneer in the exciting and, what seems to the uninitiated, hazardous game of high mountaineering on skis in winter. But the interest of this book to our readers lies in the photographic illustrations which are mostly made by Herrn Geiger, a professional photographer of Adelboden, Switzerland. Herr Geiger, being a skier as well as a photographer, and living in the midst of grand snow-scenery, has had exceptional opportunities to portray the ski-runner in his proper surroundings and, furthermore—being an artist at his work—has achieved some wonderful and beautiful results. To suggest *movement* in ski-running is always difficult; but Herr Geiger has surmounted the difficulty by selecting steep hills with mountainous backgrounds, and taking his photographs with the sun shining well across the tracks. Even then, success is unlikely unless the snow is new and powdery, and there are no old tracks in sight to confuse the issue. One picture in particular is of exceptional merit and beauty. In this a steep hill is shown, flanked with big, white clouds—the certain sign of a clearing storm in this country. From the very top of the hill to the forefront of the picture, two graceful, single-furrow tracks are seen, and a third is actually being made by a skier who, halfway down the slope, and traveling at great speed, is throwing high behind him a cloud of "pulver-schnee." No ski-ing picture that we have seen so well represents the rhythm, the velocity, and yet serenity and beauty of the sport, and, at the same time, explains so much that is inexplicable to those who have not had the opportunity to see ski-ing at its best. Only a focal-plane shutter, set at its fastest, can represent faithfully such a rapidly moving subject, and luckily the environment of such pictures is so light—being high up amongst snow-mountains—that even the most rapid of exposures is sufficient to give ample quality and detail in the surrounding view.

All the big business-houses seem to start magazines devoted either to the particular trade to which they belong, or to the doings of the employees of the firm. We have long been familiar with the paper called "Delectaland", issued by the Delecta cocoa people; and Lyons, the great caterers, have just started "The Lyons Mail," in which one may read of the recreations of their army of workers. All these house-organs are profusely illustrated with photographs. Kodak's "Professional Photographer" is, of course, of old standing and has a position all its own. But the latest addition to the list comes from the well-known British photographic firm of Houghtons, Ltd. of London and Glasgow, and has as its title, *Houghton's Professional Bulletin*. It is to be issued monthly, and the first copy is dated February, 1920. Messrs. Houghton have evidently realized that the prices of photographic materials at present vary almost from day to day, and are as fluid as the exchange rate between the different countries. Hence they have devised a method of keeping their customers in touch with current prices, which would be obsolete before they ever saw the light in a big yearly price-list. In their introduction, they describe the *Bulletin* as "a sort of monthly traveler that gives you the news of what is going on." It also directs attention to novelties the firm is introducing, and has a list of current prices of chemicals, etc. With all the uncertainties of present-day prices, and the even greater uncertainty as to whether it is possible to procure the goods at any price, there should be room for so useful and informative a little magazine.

We regret to have to record a rise in the price of British photographic plates since we have been abroad. The marter-plate size (4¼ x 3¼ in.) which, years ago, cost only one shilling a dozen, is now priced at 3/6. The Imperial Plate Company has taken to packing even so small a size as 3½ x 2½ in. in boxes of half a dozen plates. This is quite an innovation, and is, of course, the direct result of high prices. The worst of it is that it makes the cost even higher still, as naturally an extra charge has to be made on the smaller quantity. We had occasion to order some plates while in Switzerland, and noticed that there were none but English varieties to be had. When discussing some photographic matter with the Swiss shop-assistant, he proved his point by an easy reference to the *British Journal Almanac*, with which he was perfectly familiar. So British photographic goods, at least in Switzerland, are to the front.

However dormant photographic energies are in the winter, they are sure to stir again in the spring. And it is not only that the light is more encouraging for photographic work, but all kinds of things seem possible with the passing of winter's gloom. The Professional Photographers' Association is taking advantage of the rising of the sap of photographic energy, and has arranged to hold a big and important Congress and Exhibition, in April. During these last years, this dogged Association has just kept its members together and marked time; but last year it began its activities, and this spring it is gathering impetus to become a power in the photographic world, and is being much discussed just at present.

As this Congress will take place in London, the Association has recognized the congested state of our capital, and has commissioned Messrs. Cook & Son to find rooms for the visitors from the provinces. Spending a night in London, nowadays, is a problem; but on our return through France, at the beginning of the French railway-strike, we found that, compared to Paris, London was uncrowded and hospitable.

The Exhibition, or rather Photographic Fair as it is called, will be held at the Royal Horticultural Hall at Westminster, and we can write more fully of this after we have seen it. The Congress will be running from April 19 to 23, and it is intended by the Council of the Association to make it the meeting-place and Parliament of professional photographers of the whole kingdom. An interesting program of lectures has been arranged for four evenings. We are particularly eager to hear Mr. Herbert Lambert's lantern-lecture on Modern Methods of Portraiture. Mr. Lambert has gone ahead lately at a remarkable rate, and his six exhibits in last year's Salon show that, in spite of the handicap of his professional work, he has acquired

(*Continued on next page*)

RECENT PHOTO-PATENTS

Reported by NORMAN T. WHITAKER

THE following patents are reported exclusively for PHOTO-ERA MAGAZINE from the patent-law offices of Norman T. Whitaker, Whitaker Building, Washington, D. C., from whom copies of any one of the patents may be obtained by sending fifteen cents in stamps. The patents mentioned below were issued from the United States Patent Office during the month of February, the last issues of which have been disclosed to the public.

No. 1,331,092, Colored Photographic Images and Method of Producing the Same, issued to Jesse M. Blaney, Verona, N. J., assignor by mesne assignments to Prisma Incorporated, a Corporation of Maine.

Focusing-Finder, No. 1,331,269, issued to George Samuel Lalin, Rasunda, Sweden.

William Burton Westcott, Wellesley, Mass., has been issued patent, No. 1,331,174, Lens-Mount, and has assigned the same to Kalmus, Comstock & Westcott Incorporated, Boston, Mass., a corporation of Massachusetts.

No. 1,329,088, Process of Making Printing-Plates, has been issued to Emil Lietner, Hoboken, N. J., assignor to Powers Photo-Engraving Company, New York, N. Y., a corporation of New York.

Roll-Film or Similar Camera for Color-Photography, No. 1,330,535, has been issued to Henry Hess, Philadelphia, Pa., assignor to Hess-Ives, Incorporated, Philadelphia, Pa., a corporation of Virginia.

Augustus G. Boxell of Los Angeles, Calif., has been issued patent, No. 1,330,235, for Recording Plateholder.

No. 1,330,400 issued to David A. Sine, of Greece, N. Y., for Camera.

Reissue patent, No. 14,802, for Lithographic Plate or Offset and Direct Printing, to Jacob Grass, Fulham, London, England.

Roll-Film, patent, No. 1,329,785, has been issued to Arthur W. McCurdy of Victoria, British Columbia, Canada.

John H. Klenck of Warren, Pa., has procured patent, No. 1,329,715, for Camera-Shutter.

No. 1,329,424, for Multiple-Aperture Shutter, has been issued to Paul J. Marks of Rochester, New York, and is assigned to Eastman Kodak Company, Rochester, N.Y., a corporation of New York.

Subterranean Camera, patent, No. 1,331,627, issued to John B. Dilts of Paul, Idaho.

Myron B. Gordon of Wilkinsburg, Pa.; assignor to Ansco Company, Binghamton, N.Y., a corporation of the State of New York; has been granted patent for Automatic Film-Winding Camera; patent, No. 1,331,848.

No. 1,331,949, Automatic Film-Winding Camera, issued to Myron B. Gordon, Wilkinsburg, Pa., assignor to Ansco Company, Binghamton, N.Y., a corporation of New York.

Film and Shutter Controlling Device for Cameras. Patent, No. 1,331,852. Andrew H. Roikjer, Boise, Idaho.

George J. Fallesen and Walter L. Farley of Rochester, N. Y., assignors to Eastman Kodak Company, Rochester, N.Y., have invented "A Roll and Fastening Means Therefor." Patent, number 1,332,890.

An "Apparatus for Washing Prints and the Like" has been patented by Peter H. Waddell of Troon, Scotland. Patent, number 1,332,965.

Patent, number re-issue 14,821, has been issued to Lewis W. Chubb, Edgewood Park, Pa., on a "Device for producing Polar Oscillograms," assignor to Westinghouse Electric and Manufacturing Company.

Walter T. Oxley of Fergus Falls, Minn., has also assigned his patent to the Eastman Kodak Company, Rochester, N.Y. His patent number is 1,332,854, a "Photographic Printing Machine."

Max Handschiegl of Los Angeles, California, has invented a "Film Polishing Machine." Patent number is 1,334,655.

Patent, number 1,333,041, has been issued to Benjamin A. Slocum, of Rochester, N.Y., on a "Photographic Shutter."

Another patentee from Los Angeles, California, is Masaji Horie who has received patent, number 1,333,918, on a "Camera Self-Timer."

The London Letter

(*Continued from the preceding page*)

a position among the foremost pictorial portraitists in this country. In his lecture, he is showing some lantern-slides among which are some of our own child-studies. We offered Mr. Lambert the loan of some negatives; but he preferred to make his slides from the actual prints, and he has promised us we shall see some of the "quality" that he admires in our work reproduced on the screen. It is an interesting and difficult experiment, and we greatly anticipate seeing the results. We shall probably have another opportunity to see our work on the screen during the Congress, for Messrs. Kodak are giving a demonstration on "The Use of Flat Films in Place of Glass Plates" on the afternoon of April 23. On our recent trip to Switzerland, we carried nothing but these flat films on account of weight and the relatively small space they take up compared with glass plates, and it will be amusing to see these Swiss scenes reproduced in London.

Amongst the many other attractions, there will be a public exhibition of photographs illustrating the present position of professional photography in the United Kingdom. Mr. R. N. Speaight, the well-known professional child-photographer, of New Bond Street, has this section in hand, and it is sure to be full of interest to amateurs as well as to the trade.

Every Editor Has His Troubles

HE called his typist to his office. "Miss Keytap, you dress neatly and you have a well modulated voice. I might add that your deportment is also above reproach."

"You shouldn't pay me so many compliments."

"I only want to put you in a cheerful frame of mind before taking up the matter of your spelling and punctuation."—*Boston Globe.*

WITH THE TRADE

C. P. Goerz American Optical Company Sold

THE German ownership of the C. P. Goerz American Optical Company consisting of 549 shares of its common stock out of a total of 600 shares, together with all its photographic patents, tradenames and other valuable concessions, was sold by the Alien Property Custodian on March 5, 1920, to a syndicate of Boston financiers, composed mainly of members of two important banking-houses.

The office and factory of the company will continue to be maintained as previously at 317 East 34th Street, New York City, and the company proposes to continue the manufacture of photographic lenses of the highest quality, as an American enterprise entirely.

A force of highly skilled workers, together with the same supervising staff of experts with their many years of practical experience in the making of anastigmat lenses, and under the management of Mr. Fred Schmid who has been connected with the company in executive positions for twenty years, will give full assurance that the Standard of Quality of the celebrated Goerz Lenses will be fully maintained.

The demand for Goerz lenses continues to be very strong, and the present facilities of the factory are taxed considerably to meet the urgent demand. The company has lately succeeded, however, in furnishing the well-known Goerz Dagor, Dogmar and Hypar lenses in fairly good quantities, and there is every prospect that the volume of production of the many different types of lenses will soon be greatly increased. The prospects of a healthy growth of the company seem very bright, and we may look forward to an increased activity of the company in the near future.

Portrait-Lenses Wanted

THE A. T. Thompson and Company, 15 Tremont Place, Boston, Mass., is in need of portrait- and projection-lenses as announced in the advertising-pages of this issue. We understand that this company is willing to pay a high cash price for lenses that are in good order and that meet projection-requirements. Photographers should avail themselves of this excellent opportunity to dispose of their unused lenses.

A New Camera Exchange

WE are informed by Mr. Benjamin Chimberoff, manager of the Camera Exchange, 120 South State Street, Room 70, Chicago, that this new mail-order camera-house specializes in high-grade used apparatus. Equipments of every description are bought, sold and exchanged. Every camera and lens is guaranteed and is sold under a ten-day free-trial guaranty. A new bargain-list—just issued—should be in the hands of interested camera-users. Every interested camera-user should have a copy.

A. Madeline Moves to Broadway

FOR several years, the well-known importer, A. Madeline, has been situated at 503 Fifth Avenue, New York City. Increased business has made a change necessary, and Mr. Madeline's new quarters will be at 1416 Broadway, opposite the Metropolitan Opera House. A complete line of high-grade apparatus may be inspected and is always kept in stock.

Autochromes More Popular Than Ever

No method of color-photography is more popular than the well-known Autochrome process. We learn from Mr. R. J. Fitzsimons, 75 Fifth Avenue, New York City—importer of the famous Lumière products—that he is now able to fill all orders promptly. In addition to Autochrome plates, Mr. Fitzsimons carries a complete line of Richard Verascopes, Glyphoscopes, Taxiphotes, Stereoscopes and all Stereoscopic Materials. Correspondence is solicited and will receive prompt attention.

Devoe & Raynolds Company

ONE of the oldest manufacturers of paints, pigments and colors, in the United States is the well-known firm of Devoe & Raynolds Company, 101 Fulton Street, New York City. This company was founded in 1754 and its products have achieved a widespread reputation for excellence. Devoe's Photo-Oil-Colors are especially adapted to the requirements of amateur and professional photographers.

An Explicit Announcement

A NEWSPAPER in the middle west contained the following carefully prepared announcement of a local photo-finisher:

PASTE THIS IN YOUR HAT

As I am working for Mr. C. K. Schantz, I will not be at home in the day time except on Sunday. If the shade on the front door is down I am not at home, if the shade is raised I am at home, and you may come in and welcome. Persons in the country wishing to have films developed or pictures made may leave them at Boshart Bros. store if I am not at home. I will be in town every evening at 6 o'clock. Any one wishing work done may call after that hour. When you open the door a bell will ring. If I do not come in at once you will know I am busy in the darkroom and cannot leave my work. Meanwhile be seated, I will be in in a few minutes. Parties wishing to call me in regard to work will please call No. 190 between 7 and 11 P.M. After that time I will probably not hear the phone and have nobody to wake me up. Andrew Schantz, Wayland Kodak Finisher.

A Soft-Focus Tale

"I DON'T know whether I like these pictures or not," said the young woman. "They seem rather indistinct."

"But you must remember, madam," said the wily photographer, "that your face is not at all plain." She took the prints.

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in one volume. That is what the new catalog of

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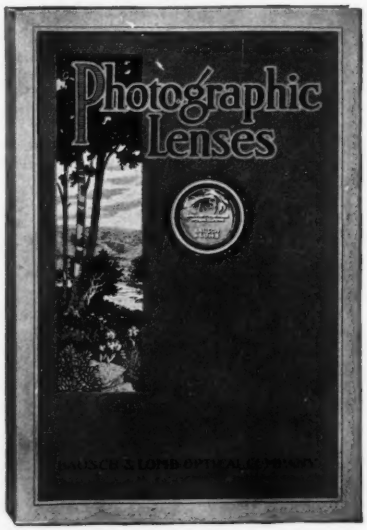
amounts to. Just from the press, with new illustrations throughout, it will excite the admiration of all lovers of artistic printing and book-making. It is also significant as the first complete catalog of this line which we have been able to publish since before the war.

The publication contains a fund of technical and practical information regarding photographic terms, optical properties of lenses, advice as to the most suitable lens-equipment for the various types of photography, and a liberal assortment of specimen photographic reproductions.

Then there are complete descriptions, illustrations and latest prices of our famous Tessar Ic and IIb lenses for reflecting- and hand-cameras, respectively, our Protar Convertible Series for all-around photography and our Series IV and V for wide-angle work—also our new Process Anastigmat for both black-and-white and color-work, presented here for the first time, our Telephoto-Attachment and other accessories.



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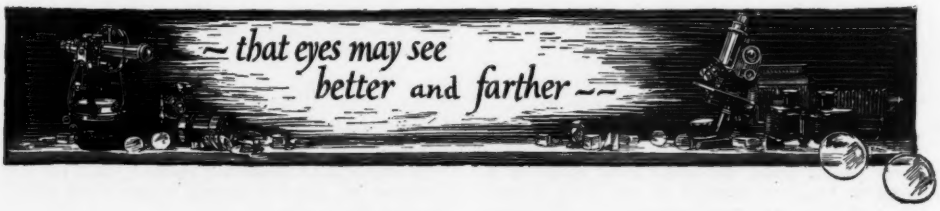

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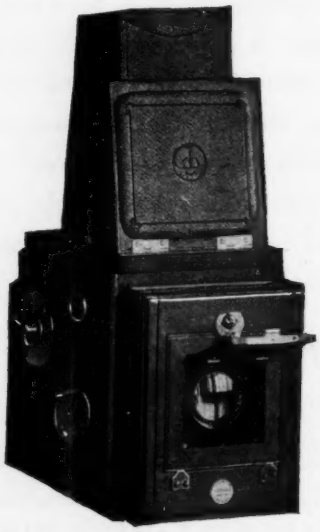

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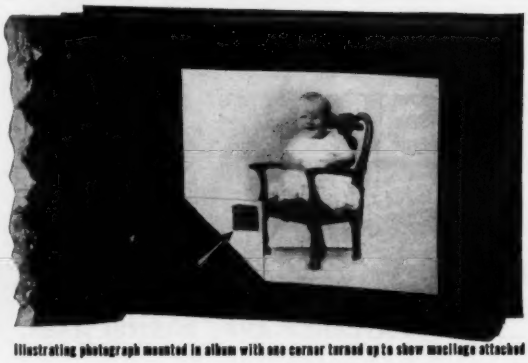

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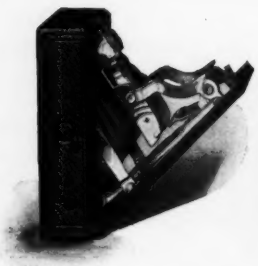

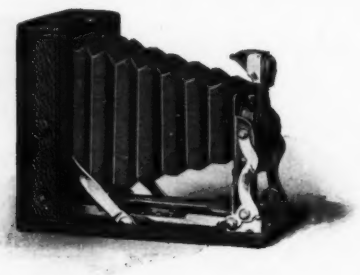

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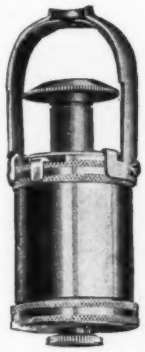

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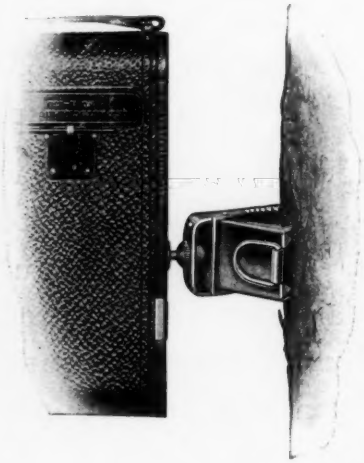

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